PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

Vol. CIII JULY 23, 1936 No. 4

Good Filters — *PLUS*

When you buy a decker, saveall, bleach washer or any other type of filter you are buying two things. You are buying something tangible—a filter. You can study its construction. You know what goes into it.

But what assurance have you that the unit will do what you want it to? None, except the experience back of the concern selling you the filter. Watch that phase of your purchase.

Oliver United engineers can point to fifteen years close contact with pulp filtration and washing, during which time they have installed more than 900 filters. That's experience! You get it when you buy an Oliver United.

OLIVER UNITED FILTERS INC.

33 West 42nd St., New York, N. Y.

221 N. La Salle St., Chicago, Illinois

351 California St., San Francisco, Calif.

DOWNINGTOWN

Tissue
Fourdrinier
REMOVABLE
ADJUSTABLE
SHAKABLE
Outstanding features of the modern Keystone Fourdrinier include rails for machine removal beneath the floor, under cover plates; shake rails supported above stationary box type girder frame and anti-friction bearings throughout. Long experience and sound design assure smooth, safe operation at the desired speed in making Tissue or News, Kraft, Book and Specialties ⩔ Get our recommendations on a new machine or for modernizing your present equipment ⩔ The Downingtown Manufacturing Company, Downingtown, Pa.

OLDEST MANUFACTURERS OF MODERN SUCTION ROLLS

Entered as second class matter at the Post Office at East Stroudsburg, Pa., under the Act of Congress of March 3, 1879. Published every Thursday by the Lockwood Trade Journal Co., at 34 N. Crystal St., East Stroudsburg, Pa. Executive and Editorial offices: 15 W. 47th St., New York, N. Y.
Domestic subscription U. S. and possessions, $4.00 per year.

PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-FIFTH YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — JOSEPH P. HORGAN, Secretary

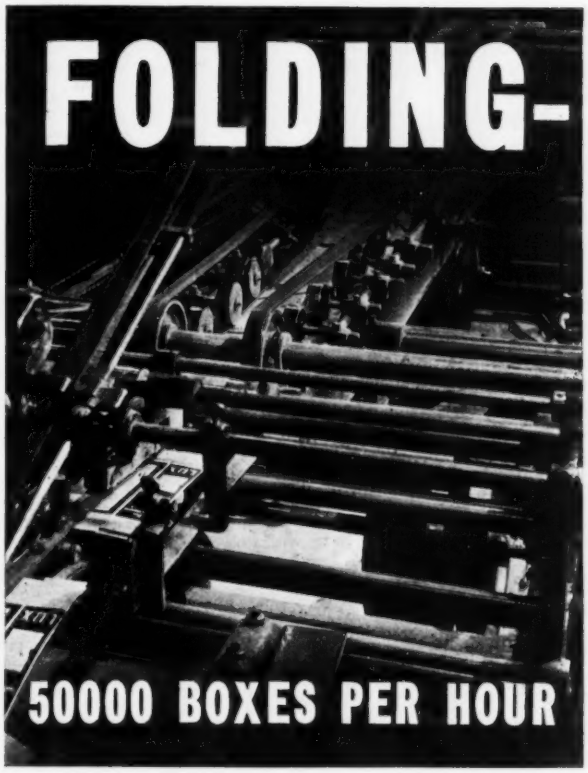
Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

TABLE OF CONTENTS

Union Bag Expands Savannah Mill	13
Kimberly-Clark Net Earnings Higher	14
New Wood Pulp Process	14
Chicago Paper Outlook Bright	15
Girder-Bilt Box Co. Starts	15
Paper Manufacturers File Returns	15
Boston Paper Demand Moderately Active	16
Ask Opinion on Robinson-Patman Law	16
Holyoke's High Taxpayers	16
Franklin Institute Display	18
The Beginning of the Kraft Paper Industry in the Southern States	21
Obituary	22
Summer Specialties Reported Active	24
H. H. Judson Speaks in England	24
Editorial	28
Swedish Pulp Market Improves	29
Pumps for Handling Paper Pulp	29
Production Ratio Report	29
Chile's Paper Industry Expanding	29
Technical Section	
Pulp and Paper Industry Literature Review	31
A Study of Some Variables in the Sheet Making Operation	32
Index, Technical Section, Volume 102	37
Paper Companies Join TAPPI	41
Great Falls Paper Co. to Rebuild	41
Port of Albany Can Handle All Traffic	41
Sweetland Pressure Filter	41
New TAPPI Members	42
Form to be Used by TAPPI Committees	42
Construction News	43
New Companies	44
Taylor Bulletins	44
B. W. Thomas Leaves Carthage	44
E. J. Trimbey Gets Patent	44
Estate of Herbert E. Harmon	44
Imports of Paper and Paper Stock	45
New York Market Review	47
Miscellaneous Markets	48
Market Quotations	48

THE PAPER TRADE JOURNAL is indexed in Industrial Arts Index

Want and For Sale Advertisements 54-55



BENNETT *Rosin-Wax* SIZES enable board manufacturers to keep pace with modern improvements in box making machinery.

While rosin tends to make the sheet hard and brittle, wax imparts a softness and pliability which are very desirable in certain grades of board.

Thus Bennett *Rosin-Wax* Sizes are used extensively in folding boxboards to secure good bending and creasing qualities. Bennett *Rosin-Wax* Size will prevent cracking and improve the appearance of the fold.

Why not investigate this profitable application of Bennett *Rosin-Wax* Size.

Bennett Incorporated
143 Sidney Street
Cambridge, Massachusetts
Please send me your new booklet "Bennett Rosin-Wax Size."

Name .....

Company .....

Address .....

BENNETT INCORPORATED

CAMBRIDGE, MASS., U.S.A.

ORIGINATORS OF ROSIN-WAX SIZE

IN GROWING from a local packer to a nationally known food manufacturer, George A. Hormel and Company greatly multiplied their sales and distribution problems. It has been difficult for distant districts to retain the same advantages as the local headquarters area, where last-minute orders can be filled with no trouble, where rush orders are handled smoothly, where problems are voiced and decisions made immediately.

Hormel thought something ought to be done. They did it. They called in Bell System representatives to make a careful study of their communication methods in handling orders with outside districts. The result was the installation of Private Line Teletypewriter Service (typing-by-wire) between headquarters at Austin, Minnesota, and sales offices at Minneapolis, Chicago, Pittsburgh, Philadelphia, and New York, plus Teletypewriter Exchange Service at Boston.

Now questions are asked and decisions made within a half-hour from the most distant points. Delivery is more prompt and service is better in all districts. Customers are happier. Hormel is happier. The average order-handling time has been cut in half and four unnecessary operations eliminated. A single typing at any field office simultaneously produces all necessary carbons and master copies at Austin. No time lost. No checking. No recopying. No errors. And all these advantages were accomplished at a substantial saving over former costs.

A similar survey might develop the same or other economies in your business. Why not discuss it with the local Bell Company? No charge. No obligation.

PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

PAPER

SIXTY-FIFTH YEAR

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with PAPER TRADE JOURNAL.

Vol. CIII, No. 4 Thursday, July 23, 1936

Established Sept. 21, 1910
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.

Union Bag & Paper Co. to Expand Savannah Mill

Merritt-Chapman & Scott Corp. Get Contract for Additions to New Kraft Pulp and Paper Plant to Cost $2,750,000—This Will Lift the Total Contract to More than $6,500,000 and Double Capacity of the Original Unit

The Merritt-Chapman & Scott Corporation has obtained a $2,750,000 contract for the construction of additions to the kraft pulp and paper plant that it has just completed for the Union Bag and Paper Corporation at Savannah, Ga. The additions will double the capacity of the original unit and lift the total contract to more than $6,500,000.

Statement from Mr. Calder

On Tuesday of this week, Alexander Calder, president of the Union Bag and Paper Corporation, sent to the stockholders of the corporation the following announcement regarding the new plans for the Savanah mill:

We are glad to announce that the new Savannah plant concerning which we have written you at various times during the past year, is practically completed and should be manufacturing pulp, paper and bags within the next month. It requires a certain amount of time before the various departments of a large operation of this type can be synchronized. For this reason, we do not expect immediately to receive the full benefits of the lower production costs which this plant promises. We may show some improvement, however, as early as August. In any event, the time is not far off when our profits should show an upward trend as a result of the Savannah operations.

You will remember that the cost of the Savannah plant was financed in 1935 through the sale of equity stock and through a bank credit of $2,500,000. Additional stock has recently been sold, with the proceeds of which the bank loans were retired so that, at this time, the company has no funded debt.

It has been apparent for some time that sooner or later we would require a second unit at Savannah. With this possibility in view the buildings at Savannah were made sufficiently large to house a second paper machine and to facilitate the installation of the necessary additional equipment. We have now decided to double our production of paper at Savannah and to make a surplus of approximately 25,000 tons of kraft pulp annually for shipment to our Hudson Falls mills.

This decision has been made because of the constant increase in the consumption of kraft pulp, board, paper and bags during the past three years, and because of the fact that with only one machine at Savannah we cannot produce enough paper to take care of our sales requirements. The cost of the new unit will be approximately $2,750,000 as compared with $4,000,000 for the first unit. Construction will start immediately. If we postponed adding the second unit for any length of time the cost undoubtedly would be much greater.

Lowers Operating Cost

A two machine operation will give us a lower operating cost than a one machine operation, and furthermore, the excess pulp available for Hudson Falls will materially reduce the cost of operations at that point as compared with present costs.

Incidentally, either one of these two Savannah machines can make kraft board as well as kraft paper. The consumption of kraft board is increasing rapidly and market prices indicate that we will be in position to make very satisfactory profits on board if, at any time, we find that we have any capacity which can be spared for that purpose.

Arrangements are being made with equipment manufacturers to accept from us two year notes, in lieu of cash, for approximately $1,250,000 worth of equipment. The notes will be purchased by certain banking connections which we have. The balance of the required money, that is, $1,500,000, has been provided for by a five year bank credit on which we are to borrow money as needed, and on which amortization payments will commence at the end of three years after the date of each loan.

The interest charges on the entire $2,750,000 will be roughly as follows:

For the year ending July 1, 1937	$40,000
For the year ending July 1, 1938	70,000
For the year ending July 1, 1939	70,000
For the year ending July 1, 1940	50,000
For the year ending July 1, 1941	30,000
	$260,000

or an average of approximately 2 per cent a year if the entire amount of the bank loans were outstanding during the entire five year period. All of the stock of Union Bag and Paper Corporation of Georgia will be pledged as collateral to the bank loans. The bank credit has been granted on terms that we believe are exceptionally attractive and the loan agreement contains no restrictions that will unduly hamper our operations.

Net Earnings of Kimberly-Clark Corp. Higher

For Second Quarter of Year Net Was $205,811, Compared With $146,707 In the Corresponding Period Last Year—Total Net Earnings for Six Months of 1936 Amounted to $409,000 Against 267,827 In First Half of 1935

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., July 20, 1936—Net earnings of the Kimberly-Clark Corporation, Neenah, Wis., continue to show a return to higher levels. For the second quarter of this year the net was $205,811, against $146,707 in the same 1935 period. This is equal to 42 cents a share on the common stock, as compared with 30 cents a year ago. These figures bring the total net earnings for the first six months of 1936 up to $409,000 as against $267,827 for the first half of 1935. Earnings per common share for the six months are 84 cents. They were 55 cents for the first half of last year.

Production Schedules Normal

Production schedules of most Wisconsin mills got back to their customary basis last week after shutdowns for several days due to excessive heat ranging as high as 114 degrees. Workmen were being overcome in some departments and many of the employers ordered the mills closed until cooler weather arrived. A brief rainfall early in the week brought relief, and the temperature has since been at a more normal status for this season of the year. No serious consequences to workers were reported at any of the mills.

New Wood Pulp Process

Invention of a new process for making wood pulp has been accomplished by Peter A. Paulson, consulting paper mill engineer, of Appleton, Wis., who has been granted a patent at Washington on all ten of his claims to originality and improvement. Application for the patent was made in May, 1934.

Apparatus has been designed which receives chips and a base-containing liquid, and in which acid gas is introduced. After the material is discharged from the apparatus, it is subjected to heat and passes through an acid absorber. Tests were especially successful with balsam, southern pine and spruce. Mr. Paulson has made no commercial assignment of the invention.

Wisconsin-Michigan Power Co. Files

The Wisconsin-Michigan Power Company, with head offices at Appleton, Wis., has filed a registration statement with the federal securities and exchange commission for $10,500,000 in first mortgage bonds carrying 3¾ per cent interest, and maturing in 1961. Proceeds will be used to redeem $5,000,000 of first and refunding mortgage gold bonds, 4½ per cent series, due in 1961. The 1957 bonds will be redeemed September 1 at 103½ per cent of par, plus accrued interest. The present 1961 bonds will be redeemed at 105¼ per cent of par, plus interest.

News of the Industry

The Consolidated Water Power and Paper Company has renewed for ten years its contract with the City of Wisconsin Rapids, Wis., for electric current supplied the city by the company's power plant. The mill has supplied the city with current since 1915. A demand rate and an energy rate have been adopted, giving the city benefit of reductions as the consumption of power increases.

Employees of the Kimberly-Clark Corporation's mill at Kimberly, Wis., are out to make another mill safety record. A safety contest is in progress patterned after a baseball setup. "American" and "National" leagues have been organized, consisting of sixteen teams in various departments with about fifty employees to each team. Each day with a perfect safety record for any team gives it a game won. The teams are penalized ten games for each lost-time accident of employees while on duty, and five games for each accident off duty. At the end of the contest the teams tied for top in each league will hold an elimination contest under new rules to determine the championship. A prize will be awarded each employee on a winning team, and to the second place team. Large posters placed in the mill announce the scores.

The Kimberly-Clark Corporation recently adopted a weekly payday system, to replace a twice-a-month arrangement in effect for a number of years. New punch clocks and record forms were installed to take care of the new plan.

Applications have been filed with the Interstate Commerce Commission for reduced freight rates on wood pulp shipments from Appleton, Wis., to Kalamazoo, Mich., and Hartford City, Ind. James F. Dougherty, attorney for the Kalamazoo Vegetable Parchment Company, appeared at a hearing in Chicago asking a reduction from 25 to 20 cents a hundredweight on shipments on the Chicago, Kalamazoo and Saginaw Railroad, a branch of the Illinois Central. R. W. Schapansky, counsel for the Hartford City Paper Company, asked a reduction from 27½ to 23 cents on shipments carried by the Soo Line.

An increase of five cents an hour has been granted sixty men employed by the Consolidated Water Power and Paper Company at its pulp wood hoist at Ashland, Wis., where wood rafted across Lake Superior is reloaded for rail shipment. The men were receiving 35 cents an hour, and asked for a ten cents per hour increase. A strike was called, but the matter was quickly adjusted at a conference of the workers with L. J. Barrett, company representative.

Efforts are being made by the Thilmany Pulp and Paper Company to sell or rent its mill at Appleton, Wis., formerly operated as a tissue division. The equipment was moved to its main mill at Kaukauna, Wis., several years ago. Appleton Chamber of Commerce is assisting in locating a tenant.

Henry W. Tuttrup, treasurer and assistant to the president of the Northern Paper Mills, Green Bay, Wis., has tendered his resignation as alderman of the First Ward on the common council of Appleton, Wis. Mr. Tuttrup plans to move his family to Green Bay immediately and reside there. He had resided in Appleton for 36 years and was active in public life there.

George F. Moss, president of the Western States Envelope Company, Milwaukee, Wis., has purchased an estate on the Root River near Milwaukee, covering 270 acres. He is developing it into a private park for the use of his 100 employees, each of whom has a key to the gate and an admittance card for himself and family. The employees have built a dam on the river and are creating a swimming pool.

Outlook for Paper Industry Bright in Chicago

Opinion Expressed That Continued Strength of Kraft Paper Reflects Future Trend of Entire Paper Market—Fine Paper Division Somewhat Irregular—Demand for Bond Papers Well Sustained—Book and Cover Less Active

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., July 20, 1936—The Chicago paper industry continued to reflect a dullness in most of the various grades, though the undertone continued to be definitely optimistic. Kraft continues strong, perhaps the strongest of the list, while book papers are going along at the slowest pace at the present time. Local reports show book mills operating at around three to four days production. Bonds are in satisfactory shape with sulphites holding their own at their new price. Covers were slightly off in demand though the undertone was said to be fairly strong. Groundwoods were little changed over last week though reports persist that these grades are in for an appreciable upturn in demand in the near future. Newsprint figures were more encouraging. Waste paper markets were featureless.

It is reported that a considerable amount of the optimism running rampant in local circles is due to the strong position of the kraft market. Local market observers are inclined to feel that kraft, because of its immediate position with respect to retail outlets, is the first to reflect business declines and business improvement. Thus kraft, the bellwether, is reflecting the future strength of the entire market.

News of the Industry

"When to Use Rag Papers" is the title of the latest booklet published by the Rag Content Paper Manufacturers, a group of some 25 rag content makers. The booklet shows a number of suggested uses for rag papers, including letter-heads, envelopes, personal stationery, ledger sheets and announcements.

The Swigart Paper Company has recently mailed out a folder describing "Highway Bond," a 25 per cent rag bond paper described as "Strathmore's offering to the man who wants an attractive letter-head but must have it at a moderate cost." It is characterized by clear whiteness and has a surface reported to take printing, typing and writing perfectly. The announcement repeats the statement that all Strathmore Bonds are now stocked exclusively in Chicago by the Swigart Paper Company.

The Chicago paper industry was disappointed to learn that the Illinois Supreme Court had adjourned without taking any action on the injunction case brought about to prevent the collection of the sales tax from the printing industry. The printers, operating under the injunction, have piled up over $200,000 in escrow which some day will go to them or the State. By October, if the case is decided then, something like $350,000 will be set aside. The case and the results have a direct bearing on the paper industry in its relation with the important paper outlets.

The Rising Paper Company has recently announced a new product, Rising Parchment, a 100 per cent rag content paper which, according to local distributors, has a special opacity which appeals to the trade.

The Aetna Paper Company has changed its watermark in its 50 per cent rag grade of bond. The change, incidentally, might be construed with a great deal of political interest inasmuch as the old name for the line was "New Deal" and the new watermark is to be "Ovation."

Dwight Brothers Paper Company, Chicago jobbers, is reported to have recently been selected as the exclusive distributors in this territory of Resource Bond, product of the Gilbert Paper Company of Menasha, Wis.

Paper manufacturers will regret to learn of the death of Christian Berg, employee of the Link-Belt Company, Chicago, and a man who contributed a lifetime to reduce lost motion, systematize shop practice and establish scientific management. Mr. Berg, who died last week, had a big part in laying the groundwork for scientific shop management as it exists today and in substituting scientific control for the rule of thumb in factory management.

Girder-Bilt Box Co. Starts

[FROM OUR REGULAR CORRESPONDENT]

INDIANAPOLIS, Ind., July 17, 1936—Leasing of manufacturing space for a new Indianapolis industry to be known as the Girder-Bilt Box Company in the building comprising a part of the Marmon Industrial District, has been announced.

H. C. Stute, who has been connected prominently with the box and package industry twenty years, will be general manager of the new company and will be associated with J. R. Watkins, a civil engineer and designer of crates and boxes. Mr. Stute said the company has received ample financial support from Indianapolis capitalists and that the business will be incorporated within a few days.

Mr. Stute said the company will manufacture new types of wood cleated corrugated boxes and crates which will be constructed in accordance with a special design for large industrial users. He said the plant will employ between forty and fifty men.

"I believe that we are approaching a new era in the packing box industry," Mr. Stute said, "and in my twenty years of experience I have never seen sales prospects brighter than they are today. The new company is prepared to meet this increased demand for package materials.

"We will manufacture the Watkins patented fording box, which already has been adopted and is being used satisfactorily by a number of large industries. Mr. Watkins, the designer of this new type of box, is one of the outstanding men in the package industry and we believe that his new package will fill a long-felt need among large industrial users.

Paper Manufacturers File Returns

WASHINGTON, D. C., July 22, 1936—A preliminary report has just been made by the Commissioner of Internal Revenue of corporation returns for 1934 filed up to December 31, 1935.

In this report it is stated that 2,318 paper, pulp and products manufacturers filed returns of which 1,209 showed net income, with a gross income of $970,413,000, and a net income of $80,890,000, having paid an income tax of $11,123,000 and an excess profits tax of $211,000 or a total tax of $11,334,000.

At the same time 1,031 firms filed returns showing no net income. Their gross income was $347,030,000 with a deficit of $28,418,000 and 78 returns were received from inactive corporations.

Demand for Paper Moderately Active in Boston

Midsummer Quietness Not So Pronounced As Usual—Some Improvement Noticed In Fine Paper Section—Paper Bag Market Rather Firm—Lower Grades of Paper Stock Stronger—Prices of Mixed Papers Are Advanced

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 20, 1936—Paper merchants here are experiencing on the whole a fair business for the summer season. In some quarters it is rather quiet but the quietness is not so pronounced as usual. The fine paper market is improving. The paper bag market is rather firm.

A feature of the paper stock market was the advance in both mixed papers and old newspapers. When the market opened last week the prices of both of these grades of old papers were boosted from their levels at that time to .30, f. o. b. Boston. Prices had been so low that many collectors went out of business. Naturally, a smaller amount was available. It is stated, however, that present quotations are only fair to what is considered the value of these commodities. Previous quotations for mixed papers and old newspapers were .22½ @ .25 f. o.b. Boston and .25 @ .27½ f. o. b. Boston, respectively.

Bagging and new domestic rags were rather quiet and unchanged in price. In old domestic rags, due to the slack season in roofing stock, with the mills not active in the manufacture of roofing paper, this commodity declined again in price. The No. 1 grade went down to 1.30 @ 1.40 from 1.35 @ 1.45; No. 2 grade to 1.20 @ 1.25 from 1.25 @ 1.30; and the No. 3 grade went to a flat 1.15 from a range of 1.10 @ 1.25. There was no change in the price of foreign rags.

News of the Industry

At a luncheon meeting of the Wrapping Paper Division of the New England Paper Merchants Association, held Thursday at the Boston Chamber of Commerce, President F. Bendel Tracy gave an outline of the conditional purchase clause as used and discussed by the Middle States Wrapping Paper Association at a Mill and Merchants Meeting at Granville, Ohio, under the auspices of the National Paper Trade Association. Mr. Tracy attended the meeting at Granville, at which about 100 were present.

John Carter & Co., Inc., have re-arranged their warehouse located next to their office at 595 Atlantic avenue, so as to accommodate the entire line of papers made by Dill & Collins, Inc., Philadelphia, Pa. They have added new steel racks and given up an entire floor to many items of this company. The John Carter Company is now carrying the complete Dill & Collins line of coated and uncoated papers.

Storrs & Bement Company are showing in their Exhibit Hall an Exhibit of Art and Design, June 29 to August 31, displaying original drawings of Charles Capon, Fred Bates, Herman Dean, Charles Donelan, Frank Duffy, T. B. Hapgood, Walt Harris, W. A. Dwiggins, Ralph Heard, George Marsh, Kenneth Morang, Forrest Orr, P. O. Palmstrom, Harold Smith, George Trenholm, Kenneth Crook, Paul W. Hawthorne, H. B. Goodman, Fred Walsh and Germaine Loeffel.

Harrie E. Waite, merchandise manager of John Carter & Co., Inc., has returned from a two weeks' vacation in Wisconsin and Michigan. He visited the home of Mr. and Mrs. F. J. Christiansen, the latter his daughter, at Manitowoc, Wis. He went to the mills of the Appleton Coated Paper Company, Appleton, Wis. Mr. Waite drove out in a car, returning by boat and train.

Charles A. Esty, president of Carter, Rice & Co. Corp., is passing a vacation at his summer residence at Orr's Island, Me.

John H. Brewer, general manager of Storrs & Bement Company, has returned from a cruise to Block Island and Nantucket.

Maurice Blackmur, sales promotional manager of Storrs & Bement Company, is enjoying a two weeks' vacation.

Knight, Allen & Clark, Inc., entertained a party of friends at the All Star baseball game at the National League Field, July 7.

Albert E. Hahn, formerly salesman for Rutter & McNaught, Inc., is now representing the Miami Valley Coated Paper Company, of Franklin, Ohio, in Boston and vicinity.

Don Ramsey and Paul Mulvanity, of the Nashua Gummed and Coated Paper Company, were hosts to the Bakers Club of Boston, Inc., at a golf outing of the club at the Nashua Country Club, Nashua, N. H., July 16.

Ask Opinion on Robinson-Patman Law

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 22, 1936—The greatest difference of opinion is being expressed among lawyers and trade association executives in connection with the administration of the recently enacted Robinson-Patman law.

The administration of this law was placed in the hands of the Federal Trade Commission but to date the Commission has made no pronouncement on the subject.

In fact, it is reported that the Legal Division has been asked by the Commission for an official opinion.

It was at first thought that this act would only apply to certain industries but the view taken now is that it probably will apply to all industries, both large and small.

Only the first paragraph of section 1 of the Act constitutes an amendment of existing law, section 2 of the Clayton Act, and therefore it is only in respect to the interpretation of this subsection that earlier court decisions may be helpful. The remaining sections of the statute are entirely new, quite ambiguous, to a considerable degree overlap, and their meaning is not clear according to counsel who have gone into the matter carefully. At the present time practically every trade association and its counsel are making an intensive study of this measure in an endeavor to ascertain its effect upon the operations of their industry.

Holyoke's High Taxpayers

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 20, 1936—The announcing of the high taxpayers in Holyoke finds the American Writing Paper Company, Inc., the largest taxpayer, it being assessed $145,423. The Holyoke Water Power Company is third with a tax of $122,095. Other paper companies with sizable tax bills are the Writing Paper Company, $53,160; Chemical Paper Manufacturing Company, $30,195 and the National Blank Book Company, $17,853.

TANNITE
Couch Rolls

PERFORMANCE, PLUS

TANNITE Couch rolls have both extreme resilience and lasting toughness — qualities seldom combined in rubber covered couch rolls. They can be made as soft as 350 plastometer and still retain maximum toughness and durability within their density range. They assure perfect couch roll performance *plus* long life. The same advantages of the exclusive Stowe-Woodward TANNITE compound are applied to Lump Breaker Rolls and FEATHERLITE Couch Rolls. Bulletin 208 "T" tells the story. Write for it.

STOWE-WOODWARD, INC.
NEWTON UPPER FALLS • MASSACHUSETTS
NEW YORK OFFICE • WOOLWORTH BUILDING

Makers of WHITE STAR *Rubber Covered Rolls,* TANNITE *Couch Rolls*
STONITE *Top Press and Smoothing Rolls — All by the* COREWELD *Process*

Franklin Institute Paper Display Attracts

Paper Trade Association of Philadelphia Sponsors Attractive Exhibit of Various Grades of Paper, Etc.—Products of District of Columbia, Strathmore Paper Co., Charles J. Cohen Co. and the Brown Co. Feature Exhibit

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., July 20, 1936.—The display of paper, envelopes and cellulose products at the Franklin Institute on the Parkway at 20th street, is attracting unprecedented crowds from all parts of the country. This display is under the direction of Russell Davis, Associate Director in charge of Graphic Arts, and is made possible through the courtesy of the Paper Trade Association of Philadelphia. It consists of specimens of blotting paper from the raw material to the finished product as manufactured by the District of Columbia Paper Manufacturing Company, for which the Paper House of Pennsylvania and Wilcox-Walter-Furlong Paper Company are distributors. There are samples of raw cotton linters and bleached cotton linter pulp, bleached sulphite pulp and unbleached sulphite pulp, bleached soda pulp and soda. The finished product is listed under the following brands: Flora—50 to 75 per cent cotton fiber; Official—25 to 50 per cent cotton fiber; Economy—sulphite and soda pulp; Floradelo—50 to 75 per cent cotton fiber; Artillery—25 to 50 per cent cotton fiber; Modern Embossed—50 to 75 per cent cotton fiber; Executive Enameled—25 per cent cotton fiber; Potomac Half-Tone—25 to 50 per cent cotton fiber; Magent—100 per cent cotton fiber.

Attention Value of Papers

Immediately adjoining the blotting paper display the eye is arrested by the Strathmore exhibit, for which the Paper House of Pennsylvania is distributor. In a conspicuous setting amid this unusual collection of Strathmore papers is printed the following well-directed text which describes the unlimited features of the Strathmore brand: "The purpose of this display is to show the expressiveness of various kinds of paper and to offer suggestions for their use in the particular field they are designed to fill. To be effective and result in returns commensurate with the cost of production, direct mail advertising should be individual, unique and above all have 'attention value.'

"For that reason the designer of advertising must decide what he wants to accomplish with a particular job, what impression is to be conveyed (beauty, delicacy, dignity, strength, novelty, etc.,) and then choose the paper that will best put his idea across. Strathmore Expressive papers provide a wide range of colors, weights and finishes which combine with variations in types, inks, art work and reproduction processes available, making possible limitless choice in the production of resultful advertising and direct mail. Paper is part of the picture."

Book and Japan Papers Shown

Book and Japan papers of definite quality, characteristics and appeal, with specimens of appropriate treatment are also displayed, together with staple cover and special cover papers with interesting examples and suggestions for their use commercially. Outside of the standard cover, book and text uses, there is a large field for advertising, decorative and novel papers both as to color, texture, service, and there is an unusually effective exhibit covering these types of paper which combine one or more of these points that recommend them for use in advertising, where "out of the ordinary" and special results are desired.

Business correspondence should impress both with its message and the paper that carries it. The Bond and Writing Paper display contains letter heads of rag content bond that are in themselves impressive and unmistakably add the proper note of authoritative quality to either business, semi-business or personal correspondence.

Progress of Envelope Industry

On the opposite side of the above displays is a very replete exhibit of envelopes which was donated by Charles J. Cohen Company. Included are catalog drug size, and odd size commercial envelopes; official and postage-saver envelopes—all in colors; pass book and coin sizes, announcement sizes, commercial letter sizes, special handmade sizes. Accompanying the above specimens is the following story: "Envelopes came into favor in England in 1841, shortly after the passage of the Penny Post Act, establishing a uniform rate of postage throughout Great Britain. Previous to that, letter paper was folded and a wafer or sealing wax was used to seal the paper.

Envelopes became generally known in the United States about 1845. The first general issue of postage stamps was ordered by the United States Government in 1847. In a glass case, in an excellent state of preservation, are original envelopes, one of which was mailed in Liverpool, England on July 25, 1856 and was received in Philadelphia August 8. The postage was 1s to send it, and apparently 5 cents in Philadelphia to deliver it. All three are addressed to Mrs. Henry Cohen, No. 15 Rittenhouse Square, Philadelphia, United States. In Philadelphia, envelopes were made by hand by Henry Cohen, founder of the Charles J. Cohen Company in 1885, and by steam power in 1862 in Crockett's Court, rear of 503-5 Chestnut street.

Solka Products Displayed

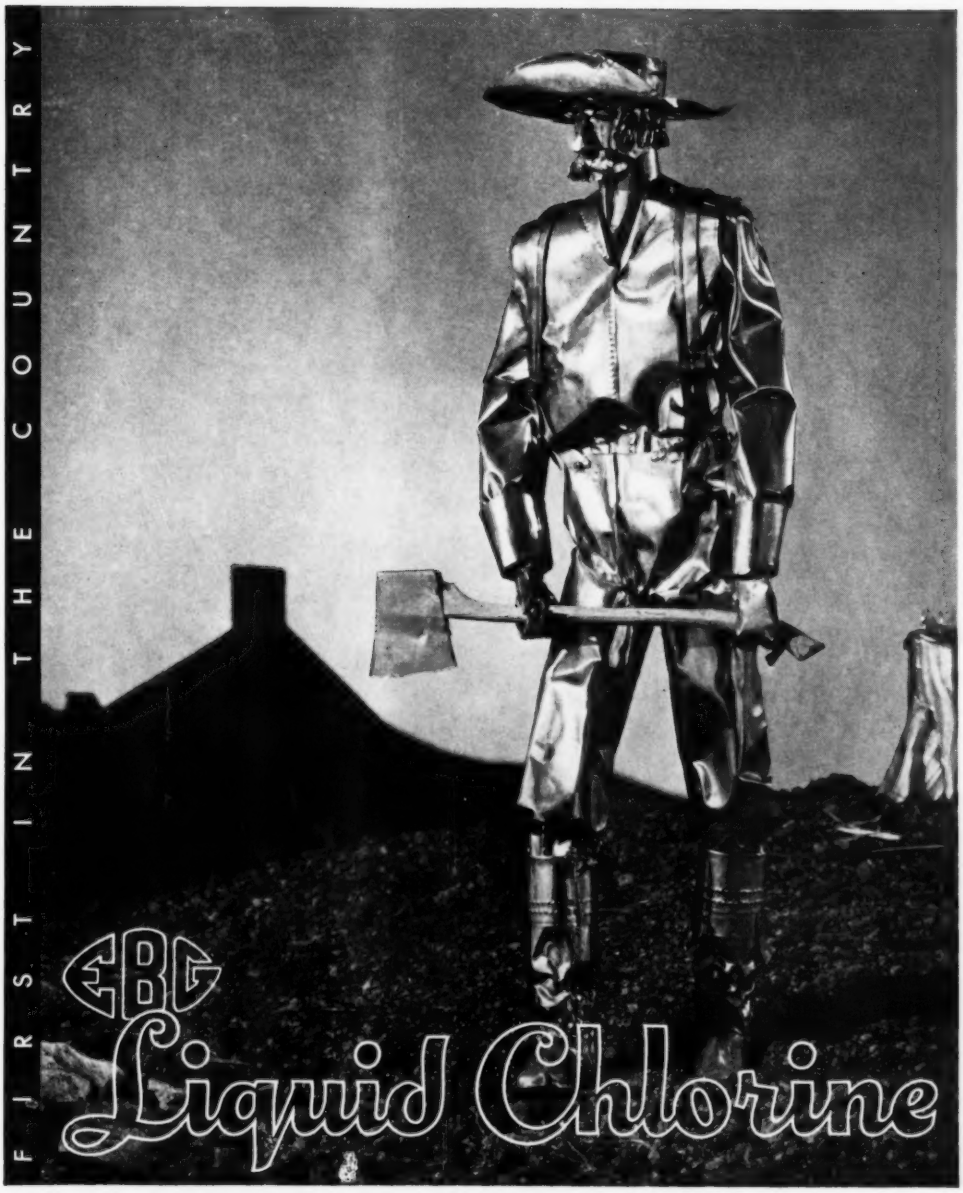
The Brown Company, of Portland, Maine, have an amazing display of products under the name of Solka, which is purified cellulose wood pulp derived from spruce trees, and after impurities are removed by patented processes, leaves only highly purified alpha cellulose. Solka is being used in 32 industries as a single base to make a thousand new and better products, among which are napkins, dress shields, cleansing tissues, towels, kitchen parchments, lamp shades and stationery.

The Paper House of Pennsylvania, among other exhibitors, has samples on display of Permanacel Bond and Ledger made from 100 per cent Solka fiber; Monadnock No. 1 Bond and Ledger, which are Solka content papers, and a paper called Transit Ledger that is also 100 per cent Solka fiber.

Richard E. King To Be Sales Manager

Richard E. King has been appointed advertising and sales promotion manager of the A. M. Collins Manufacturing Company, Philadelphia, Pa., makers of Collins cover papers, cardboard and tone-coated book papers, succeeding Frank J. Clifford.

SCULPTURED IN TIN
BY L. L. BALCOM



GONE are the dangerous days of frontier homesteading—when land was cleared by alert pioneers under the shadow of the savage's tomahawk. But the adventurous spirit of these empire builders still lives today. EBG, first to produce Liquid Chlorine in America, carries on the frontier tradition into plant and laboratory. First to adapt Liquid Chlorine to textile bleaching, paper bleaching, shellac bleaching, first to apply it to the sterilization of water, EBG pioneers steadily in the discovery of new applications for this most important product. No wonder there are so many loyal followers of EBG, the country's oldest and most experienced producer of Liquid Chlorine!

ELECTRO BLEACHING GAS COMPANY, MAIN OFFICE: 9 EAST 41st STREET, NEW YORK, N. Y. • PLANT: NIAGARA FALLS, N. Y.

The Beginning of the Kraft Paper Industry in the Southern States

The PAPER TRADE JOURNAL *has just received from the Black-Clawson Company, Hamilton, Ohio, through the kindness of Mrs. Wallace, a manuscript from the pen of the late Joseph H. Wallace who died July 7, with an accompanying letter to the editor from Mr. Wallace which explains itself. As may be seen from the date line of this letter, July 5, it was written just two days preceding Mr. Wallace's death. This matter is printed below with the thought that it will be read with deep interest by the many friends in the pulp and paper industry of Joe Wallace—Editor,* PAPER TRADE JOURNAL.

Letter from Mr. Wallace

Hamilton, Ohio, July 5, 1936.

Dear Mr. Berger:

A quiet and sane holiday brought forth the attached. If you feel that it would be of interest use it. If not throw it in your ample waste basket.

Sincerely,

JOE WALLACE.

Last Manuscript of Joe Wallace

The oft repeated questions concerning the early history of the kraft paper business in the Southern states prompt me to scan my old diaries to assure myself that I shall be telling the truth, the whole truth and nothing but. It is sometimes difficult to remember facts as they occurred and not include dreams that should have, but didn't come true, for one reason or another.

My own introduction to the possibilities of Southern pines as material for sulphate pulp was due to an engineering commission to build a six machine paper mill to make wall papers of all grades in England. The mill referred to was given me to design and build by reason of the mill Wallace & Co. had just built for the Kalamazoo Paper Company and to the salesmanship of Fred Hodge, its president, and Mike Redmond, its superintendent. These two fine friends convinced English visitors that they should hire me to build the proposed mill.

At about the same time I had just finished a one machine mill with a few grinders at Roanoke Rapids, N. C. (now the mill of Halifax Paper Corporation). This mill bought sulphite pulp and made wrapping papers. A sulphite mill was proposed and my opinion asked. In my employ at that time was a capable Swedish engineer, K. W. Sundblad, who had had experiences in sulphate mill work and was enthusiastic over its future. When I learned that pine wood having some resinous content was being successfully used by these Scandinavian mills mentioned by Sundblad, I urged the postponement of the proposed sulphite pulp mill at Roanoke Rapids until we could learn something of these new processes.

JOSEPH H. WALLACE

In July and August, 1906, Sundblad conducted me through Scandinavian mills and I became convinced that sulphate processes were likely to become important in our southern states.

On returning to England I learned that my representative in charge of construction work at the Greenhithe mill was refusing to accept lumber brought in by the contractor for wharves and jetties—and the contractor was stating that lumber up to our specifications was impossible to find.

We thought we knew where to find it and our clients backed our judgment by allowing us to purchase. And so it happened that in due time two steamships sailed from Savannah, Ga. with the aforementioned lumber. Inspecting this lumber before shipment, we learned something about saw mill wastes of that day. Savannah Harbor appeared to be a grand place to find material for paper making, providing the new sulphate processes would handle the rosins.

A few barrels of slab edgings and small wood were collected, sent North and shortly afterwards Wallace & Co. began trying to learn something about the chemistry of pulp making. On January 10, 1907, we were authorized to build a sulphate pulp mill at Roanoke Rapids, N. C. We had learned that Carl P. Carlson was a leading Swedish engineer in sulphate mill development. On May 9, 1907 I met Carlson at Copenhagen, Denmark to discuss working together and the next day we agreed on terms. So the sulphate mill at Roanoke Rapids, N. C., was designed with much help from Mr. Carlson, the father of sulphate pulp in Sweden. Our association continued until Mr. Carlson's death. Through Mr. Carlson I met Adolph W. Waern who shortly afterward joined Wallace & Co. as a sulphite mill specialist. I have yet to meet a more capable one.

In October 1909 while crossing the ocean with Ion Hamilton Benn, the subject of sulphate pulp mills in our Southern States was discussed. Mr. Benn, a partner of Price & Pierce, Ltd. had a wide acquaintance among Southern pine lumber operators and through him we arranged to work with the Dautzlers of Moss Point, Miss., on the pioneer plant proposed. The skeptics were rather amusing—we financed the plant largely in England after having operated the sulphate pulp mill at Billingsfors, Sweden on pine selected by the Dautzlers as representative of what we would find plentiful—at Billingsfors not only was kraft pulp commercially produced from long leaf pine on mill scale operations, but bleached pulp was made from the same material, shipped to England and made into fine

(Continued on page 24)

Obituary

Alexander Lowe Cassie

HOLYOKE, Mass., July 20, 1936—Alexander Lowe "Sandy" Cassie, aged 78, of 254 Walnut street, one of the outstanding personalities in the paper making industry in this city for some years, was found dead at 4:30 on the morning of July 2 in the office of the Platner-Porter-Parsons Division of the American Writing Paper Company, Inc., where he was employed as a watchman in recent years. Death was due to an acute heart attack, according to Dr. Stanley C. Cox, associate medical examiner, who viewed the body.

Mr. Cassie went to work at 10:30 the previous night, being driven by his daughter, Mrs. David McBride. He complained of pains in his chest but did not believe his condition warranted remaining from work. He made his usual rounds at 4 o'clock and it is believed that he suffered the attack shortly afterwards.

A native of Scotland, Mr. Cassie came to Holyoke 55 years ago. He was superintendent of the Wauregan Division of the American Writing Paper Company from 1893 to 1925, during which time his fame as a papermaker became widespread. Mr. Cassie's advice in that line was sought by many leading paper concerns throughout the country.

Mr. Cassie retired as superintendent in 1925 and since that time had been employed as a watchman. He was a member of the Mt. Tom Lodge of Masons, the Council, the Chapter and Commandery, Knights Templars, Melha Temple Shrine of Springfield. He was also a member of the Holyoke Lodge, B. P. O. E. In 1935 he was presented with a life membership in the Massachusetts Paper and Pulp Association. He attended the First Presbyterian Church.

He is survived by two sons, William, of Adams; and John, of Hyde Park; three daughters, Mrs. David McBride and Mrs. Edith Shum of this city; and Miss Mary Cassie, of Bridgeport, Conn.; two grandchildren; one sister in Scotland and several nieces and nephews.

The funeral services were held in the First Presbyterian Church, the Rev. Dr. John Alison officiating. The active bearers were Joseph Bario, Len Taylor, Mathew Horgan, William Mathieson, George Thompson and Andrew Purvis. Honorary bearers represented the Holyoke Lodge of Elks and Mt. Tom Lodge of Masons. He was buried in the Forestdale Cemetery.

Aspah Churchill

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., July 20, 1936—Aspah Churchill, well-known paper merchant here, died Wednesday at his residence, 247 Adams street, Milton, Mass., after an illness of several months, in his 70th year.

Mr. Churchill was born in Wrentham, Mass., August 18, 1866, the son of Gardner Aspah Churchill and Ellen Brastow Barrett Churchill. He was graduated from Roxbury Latin School in 1884, and from Harvard College in 1888. In 1900 he married Helen Olivia French.

After graduation from college, he became associated with Carter, Rice & Co., and in March, 1898, with John E. Hall in the paper business. In the summer of 1901, Mr. Churchill entered the paper business for himself, continuing actively until his death. In addition to his paper business he had been treasurer of the Rockwell & Churchill Press since 1894.

His interests were varied, but he was especially prominent in the activities of his class and the Harvard alumni. He had served as a member of his class committee for many years and in March, 1935, became its secretary. He resigned this office in June on account of ill-health, a source of great regret to his classmates, with whom he was very popular.

In town affairs, Mr. Churchill was also active. He had been for many years a trustee of the Milton Cemetery and at various times had served as sewer commissioner in Milton and as a member of the Milton constabulary. He had also been a member of the Historical and Educational Societies of Milton.

He was a member of the Boston Paper Trade Association, the Union Club of Boston, the Hoosick-Whisick Golf Club, Canton, Mass., the Milton Club and the Harvard Club of New York. He was a director or trustee of the Milton Savings Bank, the Norfolk Fire Insurance Company and the Dorchester Cooperative Bank.

He had travelled considerably, in Europe, in Quebec and Canada on a fishing trip in the summer of 1892, attending the World's Fair in Chicago and going to North Dakota for hunting the same year, and made a trip to Cuba in 1924 and to California in 1925.

Mr. Churchill had been a resident of Milton 36 years and had a summer home in Camden, Me.

His wife, a sister, Ellen B. Churchill, Glendale, Cal.; three children, Mrs. Francis B. Todd, New York; Mrs. Harvey P. Hood, Cambridge, and Aspah Churchill, Jr., New York, and four grandchildren survive.

At the funeral, which was held Saturday, at his home, Joseph D. Snell, who was with Carter, Rice & Co. at the same time as Mr. Churchill, represented the Boston Paper Trade Association. The burial, which was private, was in Milton Cemetery.

Oliver Otto Hanlon

BARNESVILLE, Ohio, July 20, 1936—Oliver Otto Hanlon, head of the Hanlon Paper Company and one of Barnesville's most beloved citizens, died July 14 from a stroke of paralysis. He was stricken in his automobile while en route to Pittsburgh with a party of friends and passed away without regaining consciousness.

His passing removes from the Barnesville scene a figure that has been outstanding for more than half a century. The wide diversity of his interests, coupled with his engaging personality, won for him an array of devoted friends. In business, he was a pioneer and in his daily life he was also different—different in a way that made one remember him and admire him.

Among his legion of friends at home, he was known best as the outstanding lover of athletic sports. He liked sports of all kinds, but baseball was his favorite game and fishing his favorite pastime. He would travel a hundred miles several times a season to see a big league ball game, but he showed an interest just as keen in sandlot games at home. And even if the game was a poor one, he got at least a big laugh out of the misplays.

Oliver Otto Hanlon was born November 2, 1858 at Malaga, Ohio. He came to Barnesville with his family when he was a small child and started in the paper business in 1872 with his father, T. T. Hanlon and brother, W. W. Hanlon. He has been head of the Hanlon Paper Company since 1907.

He was traveling salesman for the company for almost fifty years, continuing in this capacity for twelve years after he became head of the concern. He retired from the road in 1919.

Mr. Hanlon during his long life, all of which was spent as a paper merchant, was always a pioneer in the field of merchandising, creating original ideas, refusing to follow

INCREASING TAXES

mean increasing manufacturing costs. These in turn necessitate higher sales prices with no increase in profits.

The Dilts Hydrafiner means decreased manufacturing costs which can do much to overcome the increase from taxation. You will do yourself and your customers a favor by investigating the Hydrafiner.

-Dilts-

MACHINE WORKS Inc. FULTON, N.Y.

"Your Paper Is Made in Your Beaters"

the crowd, and always striking out into new fields in selling.

While associated with the Hanlon-Sharps Company of Wheeling, in 1905, he was the designer of one of the first practical paper butter dishes. After the No-Leak Paper Dish Company of Wheeling took over the plant of the Hanlon Sharps Company, they put Mr. Hanlon's dish on the market as the No-Leak paper dish. This dish is sold today by the Champion No-Leak Paper Dish Company, of Toledo, Ohio, which is a consolidation of the No-Leak and other companies.

Back in the days of sulphites, before the introduction of kraft, Mr. Hanlon developed a wrapping paper from a jute furnish which is marketed in two colors—bleached white and yellow, under the names of Yukon Jute and Sterling Jute. This paper successfully competed against a field of cheap wrapping papers and the Hanlon Paper Company is still selling it today. He also developed one of the first successful Steam Finish Sulphite Butcher's sheets under the name of Steerhead, which the company is still selling.

In recent years, he was the first man to develop and successfully market a practical cream colored grocery bag, outstanding in appearance and equal in strength to the best brown kraft grocery bag.

There will be no change in the policies of the company, and it will continue under the management of Mr. Hanlon's sons, K. K. Hanlon, of Barnesville, Ohio, and E. E. Hanlon, of Clarksburg, W. Va. The company will continue to operate over its present field which comprises eastern Ohio, western Pennsylvania and northern and central West Virginia.

Mr. Hanlon's funeral was held at Barnesville, Ohio, July 16. Among the out of town people attending were H. R. Telfer and William Carr, of Detroit Sulphite Pulp and Paper Company, Detroit, Mich.; L. L. Hanlon, of Alling & Cory Company, Buffalo, N. Y.; R. R. Hanlon, of Chatfield Paper Corporation, Cincinnati, Ohio; F. F. Hanlon, representative of the Hanlon Paper Company at Columbus, Ohio; and E. E. Hanlon, representative of the Hanlon Paper Company at Clarksburg, W. Va.

He was married twice, first to Lilly May Clary in early manhood, and later to Bertha Latimer. Two children were born by the first marriage, Mrs. Herbert Fowler, of this city, and Charles C. Hanlon, who died in 1911. Two sons were born by the second marriage, Everett E. Hanlon, of Clarksburg, W. Va., and Kenneth K. Hanlon of this city.

Arthur Miller

Arthur Miller, president and treasurer of the Miller-Kaimer Paper Company, of Elizabeth, N. J., died suddenly of a heart attack July 17 while on a fishing trip near Atlantic Highlands. His home was at 1032 Coolidge Road, Elizabeth.

A resident of Elizabeth for nearly fifty years, Mr. Miller was connected with the paper concern since 1914. He was a member of the Paper Trade Association of New Jersey, the Elizabeth Chamber of Commerce, the Elizabeth Lodge of Elks and the Masonic fraternity.

Surviving are his widow, Mrs. Anna Miller; a son, Jerome Miller; a daughter, Miss Betty Miller, and two sisters, Mrs. Camilla Donavin and Mrs. Charles Wagner, both of this city.

Summer Specialties Reported Active

INDIANAPOLIS, IND., July 13, 1936—Due to a large extent to temperatures averaging more than 100 degrees during the last week, trading in many lines of paper was curtailed. Some lines, notably all the summer specialties, benefited to a marked degree. The fine paper field is fairly steady, but the volume is down to the usual demand during the summer months. The local wholesale trade is not expecting much change until nearer fall when they book down a considerable demand for direct mail literature. Books, covers and ledgers are maintaining their price levels in nice shape, however.

No abatement is seen in demand for building papers. Insulating materials and roofing materials both are in good demand and the volume is materially higher than it was a year ago. In fact some of the larger jobbers are predicting that this summer season will see double the volume sold as in the same season last year. Prices have been held within bounds and this doubtless has aided the volume moved.

Summer specialties continue their sales appeal. Both jobbers and the larger dealers report in some instances that stocks are low and there is some difficulty in replacing them. Napkins, paper plates, cups, tissues and all similar merchandise are riding the crest of a buying wave that has not been equalled here for some few years. Prices have advanced slightly and the situation is the brightest it has been since 1929.

Most of the container factories are working steadily with fair orders on hand and prospects for a good late summer trade. The sales of containers for beverage purposes and for the ice cream trade have been far heavier than they have been for a long time. Some demand continues to come from the textile and automobile trades and a rather heavy demand is seen from the hardware trade.

Paper stock demand is about as it was. Local executives say there is a slight increase in inquiries from mills, but paying prices are low and the general situation is not entirely satisfactory.

H. H. Judson Speaks in England

Speaking before the Institute of British Foundrymen, held in Glasgow, Scotland, June 9 to 12, H. H. Judson, foundry superintendent of Goulds Pumps, Inc., presented the American Exchange Paper entitled "The founding of pressure castings" and dealing with the two cupola process. Writing with the usual British conservatism, the *Foundry Trade Journal* (London) declared Mr. Judson's contribution to be "of outstanding value"—high praise indeed since it was the only paper mentioned in the review.

This is the second time within the year that Goulds foundrymen have materially aided the advancement of the art. At the annual meeting of the American Foundrymen's Association, M. T. Ganzange, brass foundry superintendent, spoke on "The Production of Aluminum Bronze Castings to Withstand High Pressures."

KRAFT INDUSTRY IN THE SOUTH

(Continued from page 21)

book and white envelope papers. That was in July 1911, just 25 years ago!

That's all I can add to the history of sulphate pulp in the Southern States.

It was a great pleasure in February of this year, 1936, to visit Dr. Charles H. Herty at Savannah and to see something of his achievements with the same pine material that I saw burning in huge waste burners nearly thirty years before and to feel assured that through the great work of Dr. Herty and others my dreams of a Southern pine industrial empire are proving to be over-conservative.

How we optimists love to be thought conservative!

Chase Brass & Copper Co.—with a broad experience in the production of non-ferrous metals—makes and specializes in a variety of Copper Alloys for paper mills, pulp mills, and the manufacturer of paper mill equipment. To serve this industry, Chase sales offices and warehouses are conveniently located in principal cities. Chase engineers, experienced in paper mill problems, are always available, without obligation.

CHASE BRASS & COPPER CO., INCORPORATED

Subsidiary of Kennecott Copper Corporation

1936 Farnlof Street **Waterbury, Connecticut**

Johns-Manville Doubles Profit

The Johns-Manville Corporation and subsidiary companies reported last week in its semi-annual income statement, a consolidated net profit of $1,474,901 after depreciation, depletion, Federal income taxes and other charges. After dividend requirements on the 7 per cent preferred stock, the earnings equalled $1.62 each on the 750,000 shares of common stock outstanding. In the first half of 1935, the net profit totaled $798,012, or 71 cents a common share.

In the second quarter of this year the corporation earned $1,298,137, this being almost twice as much as the profit in the first six months of last year. It equalled $1.56 a share on the common stock. In the preceding quarter, the net profit was $176,764, or 6 cents a share, and in the June quarter of 1935, amounted to 551,434, or 56 cents a share.

The company made known that Federal surtax on undistributed net income has not been provided for because any liability for such tax cannot be determined until the end of the year.

The Johns-Manville Credit Corporation, a wholly owned subsidiary, the earnings of which were not included in the above statement, made $40,406 in the June quarter, against $37,494 in the first three months and $24,073 in the second quarter of 1935. For the six months' period, earnings aggregated $77,900, compared with $45,140 in the first half of the previous year.

Kennebec Mill Starts Second Machine

The Kennebec Pulp & Paper Company has started the second paper machine in its plant at Augusta, Me. The new machine, similar to the one which has been in operation the past year, will increase daily production from 25 to 50 tons and boost employment from about 150 to over 200 hands.

Operators of the mill are optimistic over future prospects. Not only will the regular line of toilet and towel tissues be produced on a doubled scale, but specialties will be extended to include a number of new items.

By increasing the facilities and employment of the finishing department, it will be possible to make many lines of fancy napkins and tissues which are in popular demand. Special machines for this type of work are being installed. The lines have already been extended to include bleached papers.

Anton Lund, manager of the plant, said that the start of the new machine will mean employing from 50 to 60 more workers, including a crew to man the machine and extra hands to handle increased operation of other departments.

The past year of increasing operation of the plant is the first period of successful manufacture of paper in Augusta since the early years of the depression when the mill was repeatedly closed because of unprofitable results.

Paper Production High in Japan

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 22, 1936—Paper production in Japan continued high during May, but sales and imports are reported to have fallen off and exports to have shown only a small gain says a report from Trade Commissioner Paul Steintorf, at Tokyo.

Imports of wood pulp for the manufacture of paper were also lower than during April, but a substantial increase is shown for the production of bleached sulphite for the production of rayon. Imports of this grade of pulp exceeded April receipts by more than 15 per cent. The United States supplied nearly half of these imports.

New Literature

Wishnick-Tumpeer Company, 295 Madison avenue, New York. A new technical booklet entitled "Witco Products —Chemicals, Oils, Pigments." The booklet presents in convenient reference form complete details on more than fifty of the various products manufactured and sold by the company. Under the classification of chemicals for the paper industry, more than fifteen of the important chemical raw-materials are completely covered.

Crane Packing Company, 1800 Cuyler avenue, Chicago, Ill. A booklet announcing Super-Seal, a new "John Crane" anti-frictional, dry-graphite lubricated plastic packing.

Bausch & Lomb Optical Company, Rochester, N. Y., has just issued an extremely interesting booklet of 28 pages, profusely illustrated in which factors in photomicrography are described. This booklet is entitled "Photomicrography Equipment," catalog E-21.

Goulds Pumps, Inc. A pamphlet entitled Goulds Centrifugal Pumps for Chemical Processes, Fig. 3605. Quite a number of these pumps, it is stated, have recently been sold to paper mills for handling liquors.

Traylor Engineering and Manufacturing Company, Allentown, Pa., has just issued a new bulletin No. 116 on the Colton-Lang Recuperator and Traylor-Cheesman Burner and Coolers.

Boiler Scale Remover

A boiler "scale" remover and eliminator, known as "Elek-Trol-Ik," is announced by Oneida Electric Manufacturing Company, Green Bay, Wis. Illustrated here, it is the outgrowth of a definite need for an efficient, economical, safe and effortless method of preventing and removing boiler "scale." It functions on the scientific principle of creating an electrolytic action within the boiler to produce corrosion that positively destroys all boiler "scale" without damage to the boiler plates or tubes. It saves fuel. Easy to install, it is designed for use in boilers up to 100 h.p. capacity, but in larger boilers more than one is used.

The "Elek-Trol-Ik" will be marketed through industrial jobbers. List price is $24.50.

Detroit Paper Products Increases Profit

Detroit Paper Products Corporation reports for six months ended June 30, 1936, profit of $162,665 after depreciation, but before federal taxes, comparing with profit of $114,181 before federal taxes in the first half of 1935.

For quarter ended June 30, 1936, indicated profit (as compiled from company's reports for the first quarter and the six months periods), was $64,332 before federal taxes, comparing with profit of $98,333 in preceding quarter and profit of $43,065 in second quarter of preceding year.

Swedish Newsprint Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., July 8, 1936—Swedish newsprint production in April totaled 19,986 metric tons as against 25,097 tons in the preceding month and 20,212 tons during the corresponding month of last year according to Commercial Attache C. E. Dickerson at Stockholm.

Paper Makers' Directory of All Nations

Dean & Sons Ltd., 6 La Belle Sauvage, Ludgate Hill, London, E. C. 4, England have just issued the 1936 edition of the "Paper Makers' Directory of All Nations" (cloth bound, over 1,000 pages).

Now in its 45th year of issue it has appeared in the Reign of four British Sovereigns, and the international character of this Red Book of the Paper Industry renders it of special interest to all those engaged in the Production, Purchase, Sale or Distribution of Paper, Pulp and Board, in the equipment of Mill or Factory, or in the supply of Raw Material in connection with the Paper and Allied Trades, while its alphabetical arrangement makes it particularly easy of reference.

It contains particulars of the Paper and Board Mills in Great Britain and Ireland, and similar details concerning the Paper, Pulp and Board Mills Overseas and in Foreign Countries; many useful lists connected with British Paper Trades; a comprehensive list of Mill Productions, arranged alphabetically in three ways: (1) Class of Goods manufactured under more than 400 trade headings; (2) Country of Origin, (3) Name of Firm, and a Classified Index forming a Buyers' Guide.

This directory may be ordered from the Lockwood Trade Journal Company, 15 West 47th street at $7.50 per copy all charges prepaid.

Roller Chain, Sprocket Stock Book

Announcement is made by Link-Belt Company, Indianapolis, of the completion of a 24-page book No. 1557, in which are tabulated the many cut-tooth sprocket wheels which are now available with Silverlink finished-steel roller chains, from stocks carried at the company's plants and warehouses, and by authorized distributors.

The new book makes ordering of a wheel or a piece of chain, or a complete drive, an easy matter, and places the Link-Belt roller chain and cut-tooth wheel business on a general merchandise, quick delivery, mail order basis.

The book shows that stock bored wheels without keyseat or setscrew are available for shipment the same day the order is received. Machine shop facilities permit prompt re-boring, keyseating and setscrewing of wheels in accordance with the order.

A copy of the new book, No. 1557, may be had by addressing the company's nearest office or distributor, or Link-Belt Company, 519 N. Holmes Avenue, Indianapolis, Ind.

Graham Mfg. In New Quarters

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 21, 1936—The Graham Manufacturing Company formerly of New York has secured quarters in the municipal lighting building on Canal street. It recently had quarters for its manufacture of paper napkins in the New York-New England building on Ely street. The Beveridge-Marvellum Company has secured storage space in the same building.

Electric City Paper Mills Make Improvements

NIAGARA FALLS, N. Y., July 20, 1936.—The Electric City Paper Mills, Inc., have completed improvements at its plant, including the installation of new machinery which triples the capacity of the mill. These improvements which have been going on for a period of six months were supervised by Aldege Marleau, superintendent of the mill and cost in the neighborhood of $80,000.

N.A.W.M.D. Protests Elimination of Cotton Mill Waste From Paper Stock Description

The National Association of Waste Material Dealers, Inc., was represented by its Managing Director, Charles M. Haskins, at the meeting of the Eastern Commodity Rate Revision Committee held at the Copley-Plaza Hotel, Boston, on July 23, at which meeting a proposition of the carriers to eliminate cotton mill waste or sweepings from the paper stock description was considered as well as a request by shippers to establish Class 22½, CL minimum weight 40,000 pounds, subject to Rule 34 on woolen mill sweepings.

The above association took the position that cotton mill waste or sweepings was properly within the paper stock description and that its elimination, aside from the unfairness involved in refusing to transport low grade commodities used for paper manufacturing purposes at rates in line with those granted to similar lines of waste, would only bring back disputes between the carriers and the shippers and result in no end of controversy as to the proper classification to be applied.

It was pointed out that at the time the present description was originally drawn up, it was the understanding of the Association that carriers were sympathetic towards a broad description which would cover all commodities of a waste character being utilized in the manufacture of paper.

Sutherland Paper Co. Increases Earnings

The Sutherland Paper Company reports for the quarter ended June 30 earnings of $242,047, or 84 cents a share on 287,000 shares of common stock outstanding. This compares with earnings of $152,157 in the first quarter of 1936, which was 53 cents a share. In June, 1935, quarter earnings totaled $156,333 or 54 cents a share on the common.

For the six months ended June 30 earnings totaled $394,204, or $1.37 a share, compared with $290,160, or $1.01 a share in the similar 1935 period. For the twelve months ended June 30 net earnings were $722,414, or $2.52 a share, against $528,095, or $1.84 a share in the similar 1935 period.

The above earnings are after all charges and after reserve of 15 per cent for normal Federal income tax. "Surtax has not been estimated as increased earnings warrant increased dividends, which will be announced following action by the board after the August meeting," L. W. Sutherland, president, states.

"Unfilled orders and contracts," Mr. Sutherland points out, "calling for delivery in the balance of the year are greatly in excess of any previous year and prices are very firm."

Holyoke Mill Resume After Brief Shutdown

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., July 21, 1936—The water was let into the canals yesterday morning at 6 o'clock and the manufacture of paper was resumed by Holyoke concerns after a two day and a half shutdown when the water was drawn out of the canals for mill repairs. Very little was done at the hydraulic plants of the mills. No new water wheels were put in and only minor repairs effected.

The Holyoke Water Power Company finished its work on the heavy piers that have been in process of construction below the head gate house this summer. These are calculated to strengthen the piers upon which the gate house rests to such an extent as to make that gate house safe against any flood.

PAPER TRADE JOURNAL
ESTABLISHED 1872
Reg. U. S. Pat. Off.
15 West 47th St., New York, N. Y.

Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm
Washington Correspondent

Price, Per Copy, 10 Cents
United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CIII New York, July 23, 1936 No. 4

FUTURE MEETINGS

TECHNICAL ASSOCIATION OF THE PULP AND PAPER INDUSTRY, Summer International Meeting in Canada, August 3 to 7, Montreal, Quebec, The Saguenay. Details may be obtained from the secretary, R. G. Macdonald, 122 East 42nd street, New York.

UNITED STATES FOREIGN TRADE IN PAPER CONTINUES UPWARD TREND

Exports of paper and paper products from the United States continue to show a rise in aggregate value except for seasonal fluctuations. Shipments during May were valued at $1,981,110. This figure represents the highest amount for any one month since May 1931, and exceeds the value of shipments for the corresponding month in 1935 by 17 percent. The volume of shipments during May was also unmistakably larger than during May, 1935. Nearly all classes of paper contributed to this increase, only writing papers, old newspapers (used in the far East as a substitute for wrapping paper), and a few converted specialties failing to reach last year's level, according to the Forest Products Division of the Department of Commerce.

The increase in a number of items, however, was not sufficient to offset declines in earlier months in the year, and while total exports for the five months' period exceeded those for the corresponding period in 1935 by 11 percent, all classes did not share in this increased trade. Exports of printing and writing papers and some classes of boards fell below last year's level; exports of wrappings, surface-coated, tissue and toilet papers were about the same as in 1935; while exports of other classes in most instances show an increase in volume. Total exports of paper and paper products for the five months' period were valued at $9,255,788, as against $8,360,096 during the corresponding month last year.

In addition to paper and paper manufactures, the United States exported $870,782 worth of paper base stocks during May, bringing the total for the five months' period up to $4,341,084. May shipments in this line were in excess of those for the same month last year but were insufficient to bring the total for the five months' period up to the level of the corresponding period in 1935. Exports of sulphite pulp, almost evenly divided between the bleached and unbleached varieties, account for 85 percent of paper making stocks.

Imports of woodpulp picked up in May, arrivals exceeding the preceding month by 35 percent. Since the first of the year imports in this group have been well ahead of those for the corresponding months in 1935. May arrivals of 167,933 tons exceeded those for the same month last year by 3 percent and brought the total for the five months' period up to 800,676 tons as against 653,674 tons in 1934. All classes contributed to this increase, with the outstanding gains occuring in receipts of mechanical groundwood, bleached sulphite, and bleached and unbleached sulphite pulps. Imports of rags were nearly double the volume received in 1935 and other paper making waste increased 64 percent over arrivals recorded for the first five months in 1935. Total imports of paper base stocks were valued at $33,765,423, of which $29,355,824 represented imports of woodpulp, $1,568,244 imports of pulpwood, and $2,841,355 imports of rags, waste and other base stocks. Imports during the corresponding period last year were valued at $27,236,321.

Arrivals of newsprint, which make up the bulk of our paper imports, were 15 percent heavier in May than during the same month in 1935, and approximately the same increase was registered in imports for the five months' period. These totaled 1,024,247 tons valued at $35,566,215. Imports of other classes of paper valued at $925,112 dropped off 7 percent in value during May, but receipts for the five months' period, which aggregated $5,195,650 were 18 percent above those for the corresponding five months in 1935. Imports of most classes of paper were heavier than during the corresponding period last year, with the largest increases in volume of receipts occurring in kraft and other wrapping papers, and printing papers exclusive of newsprint.

Aggregate imports of paper and paper products during the first five months of 1936 were valued at $40,761,865 as against $35,333,760 during the corresponding five months in 1935.

NEWSPRINT PRODUCTION INCREASES

Production of newsprint in Canada during June 1936 amounted to 270,051 tons and shipments to 262,959 tons, according to the Newsprint Service Bureau. Production in the United States was 79,830 tons and shipments 74,710 tons, making a total United States and Canadian newsprint production of 349,881 tons and shipments of 337,669 tons. During June, 27,980 tons of newsprint were made in Newfoundland, so that the total North American production for the month amounted to 377,861 tons. Total production in June 1935 was 338,272 tons.

The Canadian mills produced 202,990 tons more in the first six months of 1936 than in the first six months of 1935, which was an increase of fifteen and eight tenths

per cent. The output in the United States was practically the same as for the first six months of 1935; in Newfoundland production was 10,000 tons or six and one tenth per cent less, and in Mexico 9,665 tons less than in 1935, making a net increase of 183,481 tons, or nine and six tenths per cent.

Stocks of newsprint paper at Canadian mills were reported at 73,199 tons at the end of June and at United States mills 21,027 tons, making a combined total of 94,226 tons compared with 82,014 tons on May 31, 1936.

Swedish Pulp Distinctly Improves

The market for wood pulp in Sweden has shown distinct improvement during the first three months of the current year. Sulphite prices have hardened noticeably, with a demand considerably more active than in the immediately preceding months. The demand for sulphate pulp, which was in a better position than sulphite, also strengthened with prices very firm. By the middle of February it was estimated that 75 per cent of this year's production had been placed, and the continuance of active sales up to the end of the quarter has brought advance sales up to about 85 per cent of the estimated 1936 production, with some contracts placed for the 1937 output. Practically all of the 1936 production of kraft pulp had been sold by the end of the quarter and a large proportion of the 1937 output placed. Such lots as remain for immediate sale are going at considerably augmented prices.

The unusually active demand for chemical pulp is regarded as not necessarily indicating an equivalent increase in consumption, but rather a desire on the part of buyers to cover their requirements farther in advance than they have been doing for some years. The political tension in Europe and the likelihood of devaluation by the remaining gold bloc countries have brought a rising tendency in prices, further accentuated by the recent activity in the markets for raw materials in general.

The decision of the French Government to extend its quota system to include all kinds of wood pulp is naturally regarded as regrettable by the industry and hope has been expressed that a reasonable use of this lever will not be exceeded.

Sales of mechanical pulp also improved during the quarter and there seems little doubt that the small portion of this year's output remaining unsold will soon be taken. Some interest in 1937 business has been manifested and the prices have shown a firm tendency. The export quota agreement reached by the producers in the northern countries effective January 1, 1936, has exerted a notably stabilizing influence.

Pumps for Handling Paper Pulp

Non-clogging centrifugal pumps for handling pulpy materials such as sewage and paper pulp, are described in a new bulletin which has just been published by Morris Machine Works. The bulletin explains the construction of these pumps in detail, shows exterior and interior views, and includes complete table of dimensions for both horizontal and vertical types. The Morris non-clogging pumps described in the bulletin are furnished with sleeve bearings and supplement other Morris non-clogging pump types furnished with ball bearings and for high-speed service. Copies of the new bulletin may be obtained by addressing Morris Machine Works, Baldwinsville, New York, and asking for Bulletin 161.

Production Ratio Report

These statistics are based upon paper production reports to the American Paper and Pulp Association.

COMPARATIVE MONTHLY SUMMARIES

Month	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July (b)	.....	67.8%	.....
August	.....	70.9%	.....
September (c)	.....	75.0%	59.4%
October	.....	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*June 6	81.8%	June 8	70.5%
*June 13	81.2%	June 15	71.7%
*June 20	80.6%	June 22	73.3%
*June 27	79.3%	June 29	73.6%
*July 4 (b)	82.9%	July 6 (b)	58.5%
*June 11	72.5%	July 13	69.1%

The following statistics show the number of mills reporting by ratio groups:

	Number of Mills Reporting, Current Weeks					
Ratio Limits	June 6, 1936	June 13, 1936	June 20, 1936	June 27, 1936	July 4, 1936	July 11, 1936
0% to 50%	78	88	87	92	89	72
51% to 100%	257	245	247	242	230	153
Total Mills Reporting	335	333	334	334	319	225

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours", were as follows:

1934	1935	1935	1936
Sept. 62%	January .. 61%	July 59%	Jan. 61%
Oct. 63%	Feb. 67%	Aug. 65%	Feb. 67%
Nov. 56%	March 67%	Sept. 69%	March ... 68%
Dec. (a).. 53%	April 61%	Oct. 76%	April 70%
	May 61%	Nov. 70%	May 68%
	June 65%	Dec. 60%	

Week ending June 6, 1936—64%
Week ending June 13, 1936—70%
Week ending June 20, 1936—70%
Week ending June 27, 1936—71%
Week ending July 4, 1936—65%
Week ending July 11, 1936—53%

Chile's Paper Industry Expanding

Chile's domestic paper industry has been making noteworthy progress in recent years, according to a report from Consul General E. A. Dow, Santiago, made public by the Commerce Department.

According to the latest official census there are 12 Chilean companies manufacturing paper and cartons. The output of these plants has practically doubled in the period between 1929 and 1935, it is pointed out. Production in the latter year amounted to 10,262 metric tons of writing and printing paper, 8,970 tons of wrapping paper, and 2,960 tons of cardboard, the report states.

Chilean imports of paper in the period compared decreased from 29,328 tons in 1929 to 13,993 tons in 1935, statistics show. The recent rapid increase in domestic paper manufacture has required fairly well sustained imports of wood pulp, the report states. Imports of this item in 1935 totaled 12,150 metric tons, of which Sweden supplied the bulk.

It is probable that production of paper in Chile will continue to expand with a corresponding decline in imports, according to the report. Certain specialized items, such as carbon and cigarette paper, however, will continue to be obtained abroad. Cheap labor and high duties together with the depreciation of the local currency have been outstanding factors in developing the paper as well as other industries in Chile, the report points out.

Better Color Is Always in Demand

And many manufacturers are enjoying greater sales by meeting the demand with papers made whiter with Zinc Sulphide Pigments. Papers that are more opaque, too, with less "show through" to tire the eye or divert the mind.

Several types of such papers are being featured by progressive dealers. And all the types are identified by this improved color which bespeaks quality and which makes them attractive to the consumer.

Through the wide range of Cryptone and Albalith Zinc Sulphide Pigments, the paper manufacturer is offered a convenient means of producing these new papers of better color and opacity.

If such characteristics are of interest in your market, we shall appreciate an opportunity to discuss your problem with you. Our Research Department is the largest in the world devoted to the development and application of white pigments.

THE NEW JERSEY ZINC COMPANY
160 FRONT ST., NEW YORK

ZINC SULPHIDE PIGMENTS IN PAPE

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary.

Pulp and Paper Industry Literature Review

Abstracts of Articles and Patents Compiled by the Abstracts and Bibliography Committee of the Technical Association of the Pulp and Paper Industry, A. Papineau-Couture, John F. Ohlson, C. E. Peterson and Clarence J. West, Chairman

Copies of United States Patents can be obtained from the United States Patent Office, Washington, D. C., for 10 cents each. Send currency, not stamps.

Miscellaneous

Practical Precautions for the Prevention of Spontaneous Combustion of Coal Piles. Martin Blanke. Wochbl. Papierfabr. 66, No. 20: 383-84 (May 18, 1935).—At temperatures above 75°C., coal can lose approximately 10 per cent of its heating value after a period of 35 days. Twelve simple rules are given as precautions to be taken for the prevention of spontaneous combustion of coal piles.—J.F.O.

Coating for Concrete Surfaces. Freitag. Wochbl. Papierfabr. 66, No. 25: 476-77 (June 22, 1935).—Moisture content and alkalinity of the concrete are the most important factors in considering a coating for concrete surfaces. The author prefers zinc sulphate, water glass and other coating substances are mentioned.—J.F.O.

The Disposal of Refuse at the Mill of the Mersey Paper Company, Limited. J. H. M. Jones. Pulp Paper Can. 36: 431-436 (Aug., 1935).—A description of the layout and equipment.—A.P.-C.

Technical Education for Paper Mill Workers. R. H. Clapperton. World's Paper Trade Rev. 103: 1780-1784, 1818, 1820, 1860, 1862, 1900 (June 7, 14, 1935); Paper Maker & Brit. Paper Trade J. 89: TS94-95; 90: TS104-105 (June, July 1935).—A discussion of the importance of technical education for workers in British paper mills, with suggestions as to how it should be organized.—A.P.-C.

Longview Fibre's Simplified Stock Preparation Plant. Anon. Pacific Pulp Paper Ind. 9, No. 6: 6-8 (June, 1935).—A brief description of the layout of the new 75-ton waste paper converting plant at the mill of the Longview Fibre Co., Longview, Wash.—A.P.-C.

A Visit to San Rafael. Anon. Paper Maker & Brit. Paper Trade J. 90: 12, 12A, 12B (July 1935).—A description of the San Rafael paper mill in the Chalco district, state of Mexico.—A.P.-C.

Scientific Control in the Paper Mill. G. H. Gemmell. World's Paper Trade Rev. 103: 1692, 1694 (May 31, 1935).—Attention is drawn to the contract between the present time and 35 years ago as regards scientific control in British paper mills.—A.P.-C.

United States Patents on Paper Making. Second Quarter, 1935. Clarence J. West. Paper Trade J. 101, No. 3: 31-33 (July 18, 1935).—A list in numerical sequence of patents relating to pulp and paper making issued at Washington during April, May and June 1935.

Current Research on Pulp and Paper in Government and University Laboratories of Canada. Clarence J. West. Paper Trade J. 101, No. 7: 36-42 (Aug. 15, 1935).—An outline of the pulp and paper researches at present under way in the Ottawa and Montreal Divisions of the Forest Products Laboratories of Canada, at the National Research Council, Ottawa, and at McGill University, Montreal.—A.P.-C.

Pollutional Waste Survey of Wisconsin Pulp and Paper Mills. J. M. Holderby and L. F. Warrick. Paper Trade J. 101, No. 3: 19-21 (July 18, 1935).—A report on the studies of pulp and paper mill wastes made during 1934 by the Bureau of Sanitary Engineering, Wisconsin State Board of Health, together with a comparison of current findings with those of previous years and a discussion of the studies as a whole.—A.P.-C.

A Summary of the Research Work of the Experimental Paper Mill of the National Bureau of Standards. Merle B. Shaw. Paper Industry 17: 319-326 (Aug., 1935).—A description of the mill and of the work that has been carried out there in recent years.—A.P.-C.

Twenty-Five Years of Research. C. E. Curran. Paper Industry 17: 243-248 (July, 1935).—A description of the improved pulp and paper research facilities which have recently been made available at the U. S. Forest Products Laboratory, Madison, Wis.—A.P.-C.

Progress in Colloidal Chemistry, Yearly Report for 1934. Rudolf Lorenz. Zellstoff Papier 15, No. 5:193-96; No. 6: 233-236; No. 7: 276-279; No. 8: 313-319, (May-August, 1935).—The author makes a comprehensive survey of the literature on topics concerning colloidal chemistry and its application to the pulp and paper industry and presents the material in a brief and valuable form.—J.F.O.

The Volume Unit As a Measure of Pulpwood Value. Wallace Shymanski. Paper Mill 58, No. 30: 9-15 (July 27, 1935).—A discussion showing the inconsistency of the cord and the board measure as units of measurement of pulpwood and bringing out the importance and reasonableness of adopting the volume unit (cu. ft.).—A.P.-C.

A Study of Some Variables in the Sheet Making Operation*

By F. G. Barber[1] and F. C. Peterson[2]

Although the numerous variables encountered in preparing test sheets have, in the past, been the subject of numerous investigations, it becomes apparent, in reviewing the literature pertaining to such studies, that additional information is highly essential for sound interpretation of the results obtained. The inclusion in such studies of certain variables previously investigated seem justifiable in correlating our own tests with those of other workers as well as serving to verify, if possible, their findings. Lack of time, however, prevented a thorough study of all the variables of sheet making. This investigation was limited to the study of the effect of the following factors on the strength of pulp sheets inherent in the operation of the sheet machine:

1. Deckle-box consistency.
2. Size of wire mesh.
3. Varied substance.
4. Drainage time.
5. Fiber loss.

Preliminary Investigations

Since the available equipment differed in several respects from that outlined in the Tentative Official Standard Method of TAPPI forming and testing pulp sheets, it was necessary to make a series of orientating experiments to adapt this equipment to the standard procedure. When this was done it was possible to independently alter each variable and thus observe its effect upon the strength characteristics of pulp sheets.

In addition, it was necessary to alter the sheet machine structurally (increase the volume of the deckle-box) in order to obtain a large range of consistencies at any given standard ream weight.

Standard Procedure

The standard procedure used for sheet-making was identical to the Tentative TAPPI Standard Procedure (TAPPI Standard T 205 m.) in all respects except the following:

1. Hydration of the bleached sulphite pulp was affected in all instances by beating for a specified number of revolutions in an Abbe Ball Mill. (100 grams A. D. Pulp; 1,780 c.c. porcelain pebbles).

2. A disintegrator was used for a specified time to break up the pulp sample before beating and also for clearing the pulp after processing. The volume was then made up to 20 liters producing a suspension of 0.05 per cent consistency, thus allowing for a greater degree of accuracy in measuring stock samples.

3. Sheets were formed on a Williams sheet machine making 8 x 8-inch sheets (Fig. 1). The volume of the container was approximately doubled by the addition of a ten-inch section.

In order to obtain varying deckle-box dilutions (consistencies) for a given ream weight the inside of the container was marked in two liter graduations. These marks corresponded to the following consistencies when sufficient pulp stock was added to give the standard 50-pound ream weight (25 x 38 — 500):

2	liters	=	0.15	per cent of	pulp
4	liters	=	0.075	per cent of	pulp
6	liters	=	0.050	per cent of	pulp
8	liters	=	0.0375	per cent of	pulp
10	liters	=	0.030	per cent of	pulp
12	liters	=	0.025	per cent of	pulp
14	liters	=	0.0212	per cent of	pulp
16	liters	=	0.01875	per cent of	pulp
18	liters	=	0.01668	per cent of	pulp
20	liters	=	0.0150	per cent of	pulp
22	liters	=	0.01364	per cent of	pulp

Six pulp sheets were formed for each set of tests at a temperature between 20 and 21 degrees Centigrade.

4. Drainage time was recorded in all cases by measuring with a stop watch, the time elapsing from opening the outlet valve to the disappearance of the water through the pulp mat.

5. Couching was accomplished by using a hydraulic press and employing blotters of the specifications outlined in the TAPPI Standard. Six pounds per square inch (gauge pressure) acting for ten seconds gave most satisfactory results in this operation.

6. Drying was carried out in wooden frames of our own construction (Fig. 2) which allowed for natural tension resulting from shrinkage. Drying took place in a constant humidity room maintained at 65 degrees.

7. Before testing, the sheets were cut accurately to 6½ x 6½ inches and weighed on an analytical balance. Average thickness, fold factor, burst factor (points per hundred-pound ream) and breaking length in meters were obtained.

In order to reduce the time consumed in conducting fold test, which is of considerable length on beaten sulphite pulp, strips 11.25 mm. in width were used in place of the standard 15 mm. width. In the case of unbeaten pulp, it was necessary to revert to full width as the three-quarter width did not provide a sufficiently sensitive test.

Experimental Part

SECTION 1—The Effect of Consistency and Wire Mesh on the Strength of Pulp Sheets.

In this series of experiments, two investigations were carried out: (A) a study of the effect of deckle-box consistency on the strength of pulp sheets, and (B) the effect of size of wire mesh on sheet strength.

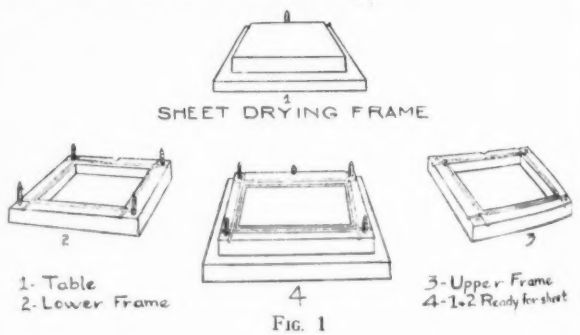


FIG. 1

* Presented at the annual meeting of the Technical Association of the Pulp and Paper Industry, Waldorf-Astoria Hotel, New York, N. Y., Feb. 17 to 20, 1936.

[1] Member TAPPI, Student, New York State College of Forestry, Syracuse, N. Y.

[2] Member TAPPI, Prof. of Forest Chemistry, New York State College of Forestry, Syracuse, N. Y.

TABLE I

UNBEATEN SULPHITE PULP FORMED ON 80 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream weight	Average Thickness (mils)	Bursting Strength	Folding Factor (full-width)	Breaking Length (meters)	Drainage Time—21 deg. C. (seconds)
22	53.9	5.70	25.50	11.87	1452	6.80
18	54.9	5.80	25.08	12.13	1452	5.72
16	55.7	6.07	24.85	12.32	1293	5.17
14	56.4	5.99	25.00	11.81	1310	4.72
10	60.6	6.48	22.80	9.91	1165	3.62
6	57.0	6.08	20.00	9.07	1175	2.28
2	59.6	6.52	16.45	6.22	1006	0.80

TABLE II

PULP BEATEN 2000 REVS. FORMED ON 60 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream weight	Average Thickness (mils)	Bursting Strength	Folding Factor (full-width)	Breaking Length (meters)	Drainage Time—21 deg. C. (seconds)
22	50.0	3.81	88.0	266	4520	9.4
20	50.0	3.79	83.8	245	4680	8.7
18	50.4	3.79	83.6	271	4550	8.0
16	50.6	3.85	83.9	263	4575	7.0
8	50.6	3.93	76.6	260	3840	3.8
2	51.2	4.07	66.1	184	3170	1.1

TABLE IIa

PULP BEATEN 2000 REVS. FORMED ON 60 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20.5 deg. C. (seconds)
22	54.5	3.70	84.0	280	4600	9.4
20	54.8	3.78	80.0	257	4190	8.6
18	54.5	3.82	79.7	225	4460	8.0
16	54.5	3.89	73.4	190	4390	7.1
10	55.2	3.97	69.7	186	4050	4.8
2	56.5	4.09	64.0	209	3470	1.1

TABLE III

PULP BEATEN 2000 REVS. FORMED ON 80 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)
22	48.60	4.12	90.05	303	5058
20	48.90	4.12	93.80	302	
18	49.30	3.95	96.0	348	4993
16	49.60	4.11	97.6	404	
14	49.65	4.09	97.2	383	
12	48.87	4.07	94.2	352	
10	48.50	4.02	88.0	394	
8	49.50	4.21	87.0	208	
6	48.63	4.23	85.7	280	
4	49.65	4.61	80.3	211	
2	49.50	4.82	75.4	231	3934

TABLE IIIa

PULP BEATEN 2000 REVS. FORMED ON 80 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)
22	45.2	3.72	96.6	366	5215
20	45.8	3.76	97.7	392	5190
18	47.0	3.90	96.3	427	5050
16	47.7	4.00	96.1	393	5040
14	46.1	3.85	92.4	353	4830
12	47.2	3.70	92.7	326	4850
10	47.4	3.60	90.3	300	4690

TABLE IV

PULP BEATEN 4000 REVS. FORMED ON 60 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—21 deg. C. (seconds)
22	49.6	3.38	97.5	782	6000	19.8
18	49.5	3.30	93.8	855	5770	15.9
16	49.8	3.45	96.4	548	5390	13.7
14	49.3	3.34	96.0	543	5590	11.8
10	49.6	3.37	92.8	507	5110	8.5
6	50.0	3.46	92.0	724	4660	5.0
2	49.5	3.48	80.0	564	4510	1.7

TABLE V

PULP BEATEN 4000 REVS. FORMED ON 80 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20.5 deg. C. (seconds)
22	49.7	3.46	99.4	648	5555	20.0
18	49.8	3.47	99.7	653	5270	16.3
16	49.6	3.40	99.2	670	5660	14.1
14	50.3	3.46	102.6	655	5485	12.5
10	49.3	3.46	96.0	672	5420	9.0
6	50.3	3.48	92.2	578	5000	5.5
2	51.2	3.59	83.2	451	4480	2.0

TABLE VI

PULP BEATEN 4000 REVS. FORMED ON 120 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20 deg. C. (seconds)
22	51.5	3.36	104.9	968	6000	24.5
20	51.7	3.45	106.6	1060	6160	21.3
18	51.8	3.45	105.6	1043	6225	19.5
16	51.3	3.39	100.5	923	6215	16.8
14	49.5	3.30	101.7	940	6080	14.0
8	52.4	3.44	94.0	735	5850	8.4
2	50.3	3.39	87.2	519	4950	2.1

TABLE VII

PULP BEATEN 4000 REVS. FORMED ON 200 MESH WIRE AT VARIED HEADS

Deckle-box volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20 deg. C. (seconds)
22	50.5	3.31	103.0	755	5975	24.5
20	50.8	3.33	104.5	887	6050	22.7
18	50.8	3.27	107.4	975	6215	20.2
16	50.5	3.36	104.0	1080	5770	17.8
14	50.5	3.28	103.5	835	5820	15.1
10	51.2	3.43	101.0	797	5530	10.6
6	51.7	3.49	98.5	870	5440	6.3
2	52.7	3.53	87.0	740	4800	2.3

Although the effect of both deckle-box consistency and size of wire mesh on sheet strength has been studied in part by several investigators, it was considered advisable to obtain additional information concerning these factors over a wider range of consistencies than previously reported.

To this end tests were carried out on (1) unbeaten pulp formed on 80 mesh wire; (2) pulp beaten 2,000 revolutions in the Abbe ball mill and formed on 60, 80, 120, and 200 mesh wires.

These results are presented respectively in Tables I; 2 and 2a, 3 and 3a; 4, 5, 6, and 7. They are represented graphically by Charts 1, 2, and 3.

Discussion of Results

(A)—The effect of deckle-box consistency on sheet strength.

It is first noted that a slight increase in ream weight was observed, with but two exceptions, as pulp consistency increased in each test. This increase may be attributed to pulp loss through the wire which will be discussed more fully later.

Similarly the average thickness in mils shows a general rise in all instances as dilution is decreased. This change is probably due to at least two causes; one being that the hydrostatic head, causing compression of the pulp mat, is decreased as dilution decreases; and another reason is that the fibers become well dispersed at higher dilutions and consequently clotting is decreased allowing the fibers to be spread more evenly over the surface of the wire. This produces a more compact sheet.

Referring to Charts 1, 2, 3, it is observed that no peaks appear in those tests in which 60 mesh wire was used with either of the beaten pulps. As will be shown later, an ab-

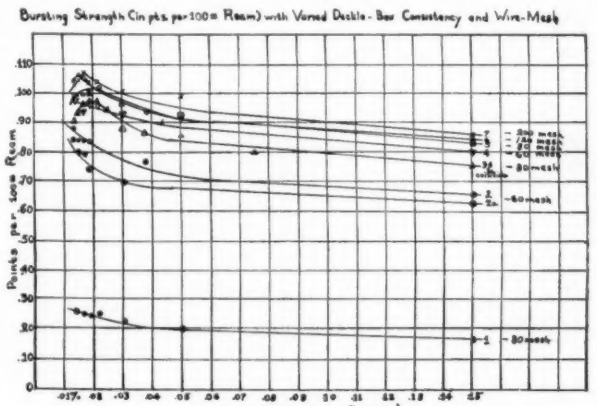

Bursting Strength (in pts. per 100 lb. Ream) with Varied Deckle-Box Consistency and Wire-Mesh
Points per 100 lbs Ream
Consistencies in Percent

CHART 1

sence of maxima for these curves may be attributed to the fact that, regardless of dilution, insufficient fines were retained by this size wire to produce the peaks noted for 80, 120, and 200 mesh wire. It then seems reasonable to assume that this constant drop in strength is due to increased clotting and subsequent poor formation as dilution decreases.

With the increase in wire mesh, that is from 60 to 80, the peaks in the curves may be interpreted as being due to greater retention of fines, particularly for bursting and folding factors. Since no peaks appear in the tensile strength curves for 80 mesh on either pulp (2,000 and 4,000 revs.) it is assumed that this wire mesh represents a border line, especially when it is noted that pulp beaten 4,000 revs. approaches more nearly to a peak. This can be explained on the basis of a presence of more fines in the more highly beaten pulp.

Sufficient data was not produced by this investigation to definitely indicate the cause of these peaks. However some light is thrown on this phenomenon by the work of Anker and Haug (1). In testing different fractions of fibers they found that the strength of paper is determined by the available surface in the fiber suspension. Since it is shown in a later investigation that fiber loss decreases with decreased dilution, it might be reasoned that this factor causes the increase in strength as pulp consistency is increased (the initial rise to form the peak). Simultaneously, as dilution decreases, the tendency to clot, resulting in poor sheet formation, begins to develop. With further decrease of dilution, the effect of increased percentage of fines seems to be obscured by the increasing effect of clotting. From this point on, the steady decrease in strength may be attributed to increased clotting.

These data are not in accordance with the work of the Pulp Evaluation Committee (2) who concluded that the effect of deckle-box dilution on strength was such that strength increased with dilution up to a point which represented a deckle-box height of 30 cm. This corresponds to a pulp consistency of 0.02 per cent. The increase observed on sulphite pulp was about 13 per cent in bursting strength with no other tests being performed. They stated later that, if a depth of 35 cm. (0.017 per cent of pulp) was used in the British Sheet Machine, this effect would be overcome, since dilution beyond this amount produced no further appreciable strength increase.

(B)—The effect of size of wire mesh on the strength of pulp sheets.

It is of interest to note the effect of wire mesh on the strength characteristics of the resultant sheets, best shown by a comparison of the curves for burst, fold, and tensile strengths. Only these tests can be used to indicate this effect since they can be corrected for basis weight and thus

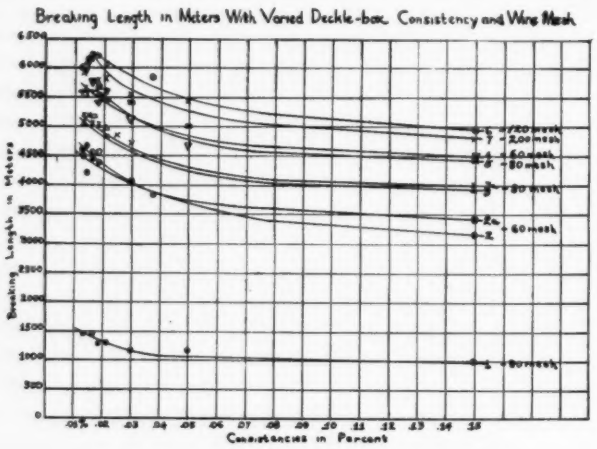

Breaking Length in Meters With Varied Deckle-box Consistency and Wire Mesh
Breaking Length in Meters
Consistencies in Percent

CHART 2

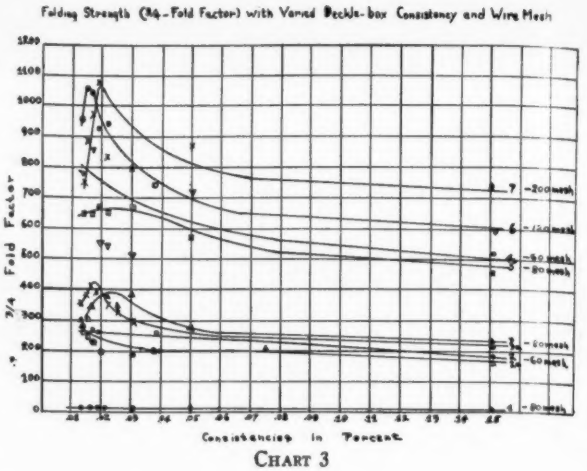

Folding Strength (¾-Fold Factor) with Varied Deckle-box Consistency and Wire Mesh
¾ Fold Factor
Consistencies in Percent

CHART 3

give comparable results.

Reference to the curves of Charts 1, 2, and 3 indicates that burst, fold, and tensile strengths increase progressively as 60, 80, 120, and 200 mesh wires are used for sheet formation, irrespective of the extent of beating to which the pulp has been subjected. It is noted, however, that there is very little difference between 120 and 200 mesh wire from which it may be concluded that, above 120 mesh, the size of wire has very little effect on the strength of pulp sheets formed thereon. This effect may likewise be ascribed to the percentage of fines retained by the wire, the finer the mesh, the greater the retention.

These results are again contradictory to the findings of the Pulp Evaluation Committee (3) who noted in a comparison of 66 and 150 mesh wire that the effect upon strength of beaten sulphite was negligible. They believe that it is not the mesh itself, but the mat of fiber which first forms, that acts as a filtering medium for the rest of the stock, thus eliminating differences in strength.

It must be noted, however, that in the work carried out by this committee a different type of sheet machine was used and a direct comparison on identical pulps would be necessary before it could be proven that one machine was more sensitive, than another to such factors.

SECTION 2—The Effect of Constant Drainage Time on the Strength of Pulp Sheets.

Since it was observed that each change in size of wire mesh resulted in a different drainage time under identical consistency conditions, it becomes necessary to investigate in detail the effect of such variations on the strength characteristics of the resultant pulp sheets. It should be pointed out that two pulps, processed under different conditions will not give identical drainage times on the same wire at similar consistencies. This property is well known as "freeness" and such phenomena would be expected since a sheet machine is similar to a freeness tester.

The sheets used in this experiment were prepared from

TABLE VIII

PULP BEATEN 4000 REVS. FORMED ON 200 MESH WIRE AT VARIED HEADS

Deckle-box Volume (liters)	Ream Weight	Average Thickness (mils)	Bursting Strength	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20 deg. C. (secs.)	Fiber Loss (per cent)
22	49.1	3.29	101.0	577	5850	23.6	5.7
20	49.9	3.36	102.0	615	5950	21.4	5.0
18	50.0	3.33	104.7	712	5925	19.5	5.0
16	50.5	3.41	99.6	657	5900	20.0	4.9
14	49.6	3.38	99.4	634	5620	21.4	5.1
10	50.3	3.46	87.3	648	5370	22.4	4.9
6	51.1	3.57	81.3	466	5000	20.9	3.6
2	52.5	3.72	79.3	615	4640	12.8	3.8

These data are presented graphically by Chart 4 (Table VIII).

pulp beaten 4,000 revs. and formed on a 200 mesh wire. Consistency was varied in steps similar to the experiments in Section 1, but the drainage time was not allowed to change appreciably. This was accomplished by adjusting the amount of opening of the gate valve.

Discussion of Results

It is first noticed that in this series the maxima in burst, tensile and fold tests again appear and agree well with the previous findings pointed out in Section 1, where a variable drainage time prevailed.

The most noticeable effect of maintaining a constant drainage time is that the downward trend of the strength curves, after passing through the peak values, is more sharp in the direction of decreased dilution that formerly obtained.

A somewhat similar investigation was made by the Pulp Evaluation Committee (4) and results indicated that optimum conditions for sheet formation, giving maximum strength, were obtained when the outlet valve was fully opened. In their experiments, sheets were prepared under a constant head at varied drainage times, while in our case they were formed at a constant drainage time at varied heads.

Since it was necessary in this experiment to regulate the outlet valve to obtain an approximate constant drainage time, it is evident that conditions were created (increased drainage time) which would allow increased clotting of the fibers with subsequent poor formation. Thus we are obliged to explain the greater strength drop as being due to appreciable lengthening of the normal drainage time of the sheets formed at the lower dilutions. This is in accordance with the findings of the Pulp Evaluation Committee who reported that a rapid drop in the burst factor occurs as drainage time is increased.

SECTION 3—The Effect of Varied Ream Weight on the Strength of Pulp Sheets. (Constant Head)

This experiment was carried out to ascertain the degree of accuracy obtained in basis weight corrections, as generally applied in strength testing computations, where a large range of ream weights are used. Although the Pulp Evaluation Committee (5) has investigated the variation of burst factor with substance, no work appears pertaining to the effect of this correction on tensile and folding strengths. The committee studied a range of basis weights from 29.9 to 90.3 pounds and found that the results showed good agreement, within 3 per cent, over the entire range examined, with only the lightest set of sheets being appreciably weaker (9%). Using sulphite pulp, they found a

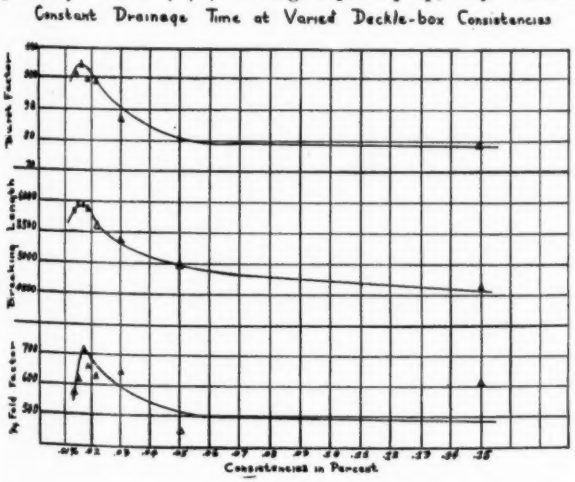


CHART 4

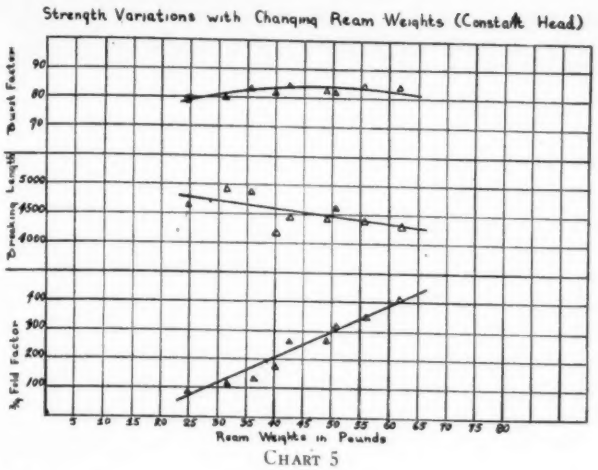


CHART 5

tendency for the burst factor to also fall as the basis weight was increased above the standard value. (60 pounds).

In our experiments sheets were formed on 80 mesh wire from pulp that had been beaten 2,000 revs. in the ball-mill. Sets of sheets covering a range of basis weights from 28.9 to 63.3 pounds were made by adding the necessary volumes of stock to the sheet machine. In all instances the volume of stock in the deckle-box was made up to 14 liters thus maintaining a constant hydrostatic head.

TABLE IX

PULP BEATEN 2000 REVS. FORMED ON 80 MESH WIRE—CONSTANT HEAD

Deckle-box Volume (liters)	Deckle-box Consistency (per cent)	Ream Weight	Bursting Strength	Average Thickness (mils)	Folding Factor (¾-width)	Breaking Length (meters)	Drainage Time—20° C. (secs.)
14	0.01823	63.3	83.2	4.85	410	4260	7.92
14	0.01606	55.8	83.8	4.18	345	4325	6.90
14	0.01475	51.2	81.7	3.94	317	4600	6.47
14	0.01384	48.0	82.0	3.63	264	4425	6.14
14	0.01275	44.3	84.4	3.52	261	4420	5.80
14	0.01140	39.6	81.8	3.11	179	4165	5.42
14	0.01050	36.5	83.0	2.98	134	4880	5.18
14	0.00930	32.3	80.0	2.63	112	4910	4.84
14	0.00830	28.9	79.0	2.42	86	4645	4.80

These data are also shown by Chart 5 (Table IX).

Discussion of Results

The curves of Chart 5 conclusively indicate that basis weight corrections do not satisfactorily compensate for variations in substance over a wide range.

In the case of bursting strength it is seen that the results are in close agreement (3 per cent) over the entire range excepting the two lightest sets which show a 7 per cent drop in strength. These results agree quite well with those obtained on the British Sheet Machine both as to the increase of strength up to a certain substance and the slight drop thereafter.

Although rather irregular in appearance, the curve of tensile strengths plotted against varied ream weights clearly indicates that this test is definitely affected by substance variation. Tensile strength decreases as basis weight increases, falling about 14 per cent over this range. It becomes evident that this factor more closely restricts the range within which reproducible sheets can be made.

The greatest error in strength calculations in correcting for basis weight variations is found to occur for folding factor. This is shown by the curve to increase steadily and continuously as ream weight is increased with a difference of 81 per cent resulting over the range studied.

It should be noted that the variations in ream weight encountered in the previous experiments were of such degree as to cause very little, if any, change in the calculations of strength values.

SECTION 4—Fiber Loss Through Wires of Varying Mesh and Its Effect on Sheet Strength. (Constant Head.)

This series of experiments was undertaken to obtain additional data which might throw some light on our previous theories regarding the effect of fiber loss on the strength of sheets formed on wires of different mesh. The present study has also taken into consideration the effect of deckle-box consistency upon retention.

Previous investigations of this factor have been rather limited in extent and confined entirely to ground wood pulp (6). Obviously this data could not be applied directly to the present investigation which was conducted on sulphite pulp.

For this investigation sheets were prepared from stock beaten 4,000 revs. and using 60, 120, and 200 mesh wires. Three sets of sheets were made on each wire using 400, 600, and 800 c.c. of pulp stock. The stock was diluted to 14 liters in all cases and consequently a different deckle-box consistency was obtained with each volume of pulp.

Fiber loss was obtained by evaporating similar volumes of pulp stock in triplicate check, and the percentage loss calculated from the average weight of each set of six sheets.

TABLE X
PULP BEATEN 4000 REVS. FORMED ON 60, 120, AND 200 MESH WIRE—CONSTANT HEAD

Deckle-box Volume (liters)	Volume of Stock used (c.c.)	Fiber-loss in per cent			Drainage Time 21 deg. C. (seconds)		
		60-mesh	120-mesh	200-mesh	60-mesh	120-mesh	200-mesh
14	400	11.1	10.7	10.4	6.7	7.2	7.5
14	600	9.0	8.0	7.5	11.4	12.9	13.8
14	800	7.4	4.9	4.3	19.2	21.4	23.5

The above data are shown by Chart 6 (Table X).

Discussion of Results

Reference to these data and curves (Chart 6) indicates rather conclusively that wire mesh has an appreciable influence on fiber loss and it is noted that 200 mesh gives the best retention of the three studied.

Of greater interest, however, is the effect of deckle-box dilution which produces increased retention as the consistency of the pulp increases. This is possibly due to the fact that with increased dilution the fibers are more effectively separated thus counteracting the forces that cause clotting. Under such conditions more fines would escape through the wire mesh before a mat formed to restrain them.

A further substantiation is offered by the fiber losses recorded in Table 8 which show a steady increase of fiber retention as the deckle-box dilution was decreased.

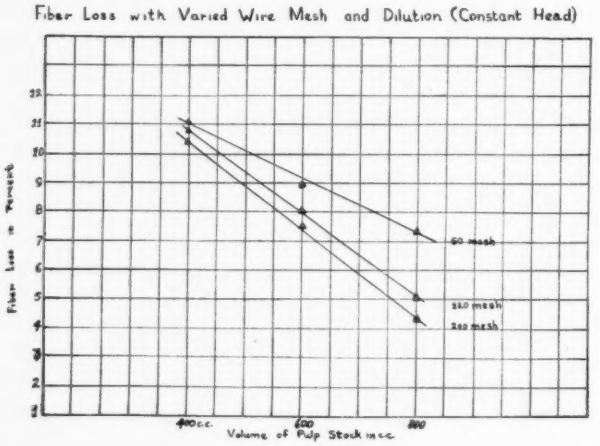


CHART 6

In addition, it may be possible that rapid sheet formation would tend to increase detention since under these conditions a pulp mat is laid down instantaneously thus preventing the escape of fine fibers. However, clotting is quite prominent in the lower dilutions and may entirely account for the lowered fiber losses as pulp consistency increases.

The increased retention of fines, as deckle-box consistency increases, seems to account for the slight rises in ream weight (2 to 4 pounds) where dilutions are varied as in Section 1.

Conclusions

1. (a) Investigations of the effect of deckle-box consistency on the strength of pulp sheets indicates that at the higher pulp consistencies there appears to be a direct correlation between this factor and the increase in ream weight. A similar condition prevails with respect to the increase in average sheet thickness. The former may be attributed as being due to greater retention whereas the latter may be regarded as resulting from loss of both compactness and even sheet formation.

Peaks or maxima occurring in the curves when strength is plotted against consistency seem to be produced by two factors. At first increased retention of fines as deckle-box dilution is decreased causes a rise in strength. But as higher consistencies are used clotting becomes predominant and strength then falls. In cases where no peaks were observed, clotting seems to be the primary cause of the constant drop in strength as dilution is decreased.

(b) The effect of size of wire mesh is an important factor in the strength values of pulp sheets. These experiments indicate that this factor increases only to a certain mesh, (120 in this case), and wires of finer mesh produce no further differences in strength characteristics. This change in strength is attributed to the degree of retention by the wire, the finer mesh giving greater retention up to the maximum of 120 mesh.

2. Studies on sheets prepared at constant drainage time reveal that, in addition to the regular drop in strength as deckle-box dilution is decreased, a further decrease was observed which is believed to be due to increasing above the normal of the drainage time at the lower dilutions. Such conditions allow a greater degree of clotting with resultant lower strength values.

3. The effect of varied ream weight on the strength of pulp sheets varies with the type of test employed. For burst factor, the variation was slight occurring only at the extremes of the range of wights studied. The effect is more pronounced in the tensile strength test, an appreciable drop being recorded over the entire range investigated. Fold factor is effected to the greatest degree an increase up to 81 per cent being observed in these experiments.

4. Size of wire mesh has a marked effect upon the degree of retention of fine fibers, the finer the mesh the greater the retention.

Similarly, retention is appreciably changed by the deckle-box dilution, the greater the dilution, the larger the fiber loss through the wire.

It is believed that these two factors are responsible for the maxima appearing in the curves of Section 1, as well as the slight increase in ream weight observed with decreased dilution.

Literature Cited

1. Auker, C., and Haug, K. Papier-J. 20, 225-8, 267-72 (1932).
2. Interim Report of the Pulp Evaluation Committee to the Technical Association of the Paper Makers' Association. Published by the Paper Makers' Association of Great Britain and Ireland (1929). Page 75.
3. Interim Report. Page 74.
4. Interim Report. Page 77.
5. Interim Report. Page 80.
6. Interim Report. Page 74.

Index, Technical Section, Paper Trade Journal, Vol. 102

January to June, 1936

Prepared by Clarence J. West, Chairman, Committee on Abstracts and Bibliography, TAPPI

The page numbers of the following index refer to the continuous paging of the *Technical Section* and have no relation to the paging of the individual numbers of the PAPER TRADE JOURNAL.

References to the abstracts published in the *Technical Section* are preceded by the letter "A"; those to patents are indicated by the letter "P." Other entries refer to original articles in the *Section;* the author entries are printed in capitals. No author entries are given for the abstracts or patents.

In order to facilitate reference to the individual numbers of the PAPER TRADE JOURNAL, the following table is given, showing the pages of the *Technical Section* appearing in each of the 26 numbers of Volume 102 of the JOURNAL (January to June, 1936).

No. 1	Jan.	2	1- 16	No. 14	April	2	189-202
No. 2	Jan.	9	17- 30	No. 15	April	9	203-216
No. 3	Jan.	16	31- 44	No. 16	April	16	217-228
No. 4	Jan.	23	45- 54	No. 17	April	23	229-240
No. 5	Jan.	30	55- 68	No. 18	April	30	241-246
No. 6	Feb.	6	69- 80	No. 19	May	7	247-258
No. 7	Feb.	13	81- 88	No. 20	May	14	259-268
No. 8	Feb.	20	89-124	No. 21	May	21	269-278
No. 9	Feb.	27	125-144	No. 22	May	28	279-288
No. 10	March	5	145-154	No. 23	June	4	289-296
No. 11	March	12	155-170	No. 24	June	11	297-304
No. 12	March	19	171-180	No. 25	June	18	305-320
No. 13	March	26	181-188	No. 26	June	25	321-332

A

ABRAMS, ALLEN, and BRABENDER, GEORGE J. Factors affecting the determination of water vapor permeability 204
Absorbent papers, drying rate 112
Acetamide, treating felts with P9
Acetates, pretreatment of wood with P187
Acetic acid, recovery from black liquor P168
Acetone
  Black liquor, recovery from P168
  Sulphite waste liquor, determination in 83
Acidity of paper, measurement A88, 89
Acids, determination in sulphite waste liquor 82
ADAMS, F. W. Rate of drying of writing papers 319
Adhesives A321
  Silicate 234
  Starch, use of, as 229
Aerotemper A10
Air Conditioning A10
Alkali recovery, electrical precipitation in 45
Alkaline process 198
  Waste gases, chlorine treatment A168
Alpha pulp, characteristics 155
Alum 233
  Dyes, effect on 269
  Pigment retention, relation to 24
  White water clarification, effect on 4
Aluminum sulphate, hydrogen ion concentration 3
Ambrac, corrosion of 76
Ammonia, treating felts with P9
Animal sizing A288
Aspen wood
  Digestion, rate of 53
  Nitric acid digestion A170
Attrition mill
  Contact inches per minute 192
  Impact inches per minute 192

B

Bagasse, fermentation A87
Bamboo
  Digestion P146
  Paper making material P146
Bark, determination in pulp wood 263, 264
Barker 297
  Electrical control P8
  Regulator, automatic P8
  Spade shaped P9
Barking, forest vs. mill A7
Barking drum, carrier for P8
"Barnacle Bill" beater A188
Basis weight, relation to pigment retention 23
Bearings
  Antifriction 120, 199
  Nomy A5
  Sleeve type 119
Beater P188, 198, 299
  Contact inches per minute 192
  Defects A188
  Impact inches per minute 192
  Series A188
  Thorsen-Héry 60
  Voith P188
  Vortex A188
Beater furnish P188
Beater size 66
Beating
  Dyes, effect on 269
  Hydraulic system 299
  Pigment retention, effect on 25
  Sheet properties, effect on 36
Beating tackle, mechanics of 256
Beating tester A10
BEAVER, C. E. *See* Sultzer, N. W.
BECHTEL, A. R. Increased saveall recovery with chemical control 1
Beech wood, sulphite pulp from A169
BENSON, H. K. *See* Partansky, A. M.
Beryllium copper alloys 75
Bewoid sizing process 197, A288, A296
Bibliography
  Pitch in pulp 316
  Sulphite waste liquor analysis 87
  Surface treatment of paper (patents) 326
  Waste liquors and gases (patents) 11, 28, 31
BIDWELL, G. LAMONT, Jr., and SUTHERLAND, D. MANSON, Jr. Computation of impact and contact inches in beaters and refiners 192
Birm 18
Bituminous paper A7
Black cooks, method of preventing P187
Black liquor
  Acetic acid from P168
  Alkali fusion P168
  Carbonization P168
  Chemical recovery 198
  Evaporation, Murray-Waern system 271
  Furnace P146
  Heat content 275
  Oxalic acid from P168
  Patent review 11, 28, 31
  Recovery, alkali loss in 45
  Soap, floating, from P168
  Wagner furnace A168
Black spruce, compression wood 221
Bleach vat P9
Bleaching 289
  Chlorine P203
  Hypochlorite 291
  Mixing methods P203
  Multi-stage 292
  Review A203
  Sulphite pulp A203
Blowoff gases, composition A169
Board liners, titanium pigments in 249
Boards P7
  Corrugated P7
  Drier, continuous P304
  Impregnating P7
  Rubber in P7
  Warping A7
  Waterproof P7
Boiler scale, analysis 224
Boiler shell, insulation 108
Boiler water
  Carry over 226
  Conditioning 222
  Deaeration 227
  Oxygen elimination 225
  Pretreatment 227
Boiler-metal cracking 226
Boilers
  Corrosion in 224
  High pressure A10
  Scale formation, prevention of 224
Bond paper, titanium pigment in 248
Book paper, titanium pigment in 248
Box testing laboratory A9
BRABENDER, GEORGE J. *See* Abrams, Allen.
BRAINERD, F. W. Testing of wood pulp for moisture 150
Brasses, properties 73
Breaker beater, screen 199
Breast roll P9
Brightness tester A9
Bronzes 74
BROWNING, B. L., and ULN, R. W. K. The nature and measurement of paper acidity 89
BUTZLER, E. W. Proper feed-water and boiler-water conditioning for high pressure boilers 222
BURDICK, T. A. Application of Diesel engine to the paper industry 146
Bursting strength
  Beating, effect of 38
  Paper, determination of 255
    Official method 122
  Pigmentation, effect of 38
Business cycle 98

C

Cable paper, twisting number A10
Calcium, determination in sulphite waste liquors 82
Calcium acetate, use in cigarette paper P7
Calcium hydroxide, effect on white water clarification 4
Calcium sulphate, use as filler P296
Calcium sulphite, manufacture A168
Calender P8
  Power requirements 215
Calender stack A6
Carbon paper A5, P8
CARSON, F. T. Some notes on the revision of methods for measuring the strength of paper 253
Casein 234
  Invert sugar, use with 66
  Rosin size, use with 197
Cast irons 58
Catalog paper, titanium pigments in 248
Caustic soda 232
Cellulose
  Acidity, determination of A88
  Purification by hydrochloric acid A89
  Review A145
  Water penetration A88
  X-ray studies A88
Cellulose fibers
  Dimensions of A88
  Fibrillar structure 250
  Structure 250
Cement
  Lime sludge A168
  Silicate A10
Cement industry, paper sacks for A7
Celoron, suction box covers A6
Centrifiner A6
Cerelose, use in paper 235
Chemical methods of paper testing, Committee report 79
Chemical recovery, Murray-Waern system 271
Chip density, determination of 266
Chip screens 297
Chlorine 233
  Pulp, purification of, with A305
Cigarette paper P7
  Flax hemp rope pulp for A146
CLARK, FREDERIC C. Pulp and paper manufacture developments 197
CLARK, JAMES d'A. Some observations on burst, tensile and stretch tests 26
CLARK, JAMES d'A., and von HAZMBURG, R. S. Further notes on the kollergang beating method for pulp

evaluation 193
Clark kollergang 193
Classifiner 102
Clay 232
  Coating with P203
  Dispersing agent P203
Coal burning equipment 176
Coal handling equipment 176
Coated paper
  Apparatus P288
  Curling 281
  Drying P304
  Dull finish P288
  Latex in P288
  Lithography on 281
  Oil absorption test 242
  Peeling 281
  Picking 281
  Plasticizers in 65
  Starch, use of 230
Coating
  Patent review 326
  Pebble mill in 277
Coating brushes A7
Coating materials P296
  Titanium pigments 248
Coating mixtures, grinding in pebble mill 277
Cobb water resistance test 40
CODWISE, PHILIP W. Water resistance of paper 39
COGHILL, JAMES. Pulp testing by a rapid sheet making process 127
Color Lakes 269
Committee on Abstracts and Bibliography, report 237
Compression wood
  Characteristics 220
  Occurrence 220
Condenser paper, flax hemp rope pulp for A146
Consistency
  Regulation P9
  Riffling, effect on A6
Construction materials 43
Contact inches 193
Copper
  Corrosion tests in sulphur dioxide .. 76
  Properties 71
  Season cracking 76
  Spray tests 76
Copper alloys 72
  Corrosion in sulphur dioxide 76
Copper number of pulps A10
Copper-beryllium alloys 75
Copper-nickel alloys 74
Copper-nickel-zinc alloys 74
Copper-silicon alloys 74
Corn sirup, plasticizer 63
Cornstalk pith
  Separation of A87
  Uses of A87
Corrosion
  Boiler 224
  Copper and copper alloys 76
Costs, calculation of A19
Cotton linters
  Cellulose yield A87
  Evaluation A87
  Ripeness A87
Cottrell electrical precipitator 45
Couch section, power requirements 213
COWLES, EDWIN. The Cowles system for detrashing and defibering waste paper stock 102
Cowles classifiner 102
Cowles refiner 102
Curling of coated paper 281

D

Deinking A88, P88
  Equipment, insulation of 109
DICKHAUT, STEPHEN J. Using pebble mill in coating mill 277
Diesel engine
  Characteristics 147
  Paper industry, use in 146
  Plant cost 149
  Plant layout 149
Diethyleneglycol, pulping with P188
Digesters
  Continuous P188
  Filling P8
  Insulation 108
  Iron, use of 58
  Liquor circulation in P9
Disc refiner 256
Doctor, Vickery A6
DODGE, GEORGE W. The Thorsen-Héry beater 60
Downingtown top press roll drive A6
Downingtown suction felt roll A6
Drainage rate, relation to pigment retention 23
Drier P8, 301
  Automatic control 185, P304
  Condensate regulatory valve A296
  Conveyor for P304
  Drainage 301
  Insulation 108
  Test sheet 139
Drier cylinder P304
  Steam joint 199
Drier felt seam P304
Drier section, power requirements 214
Drives, electric A8
Drying A304
  Writing paper, rate of 319
Drying process, control 185
Dyes 198, A203
Paper mill variables, effect of 269

E

Electric brakes for winder A8
Electric drives A8
Electric finish and formation tester .. A10
Electrical machinery
  Mechanical design 116
  Ventilation 116
Electric power coordination A10
Esparto, paper making material A87
Ethanol, determination in sulphite waste liquors 83
Ethylene glycol
  Plasticizer 65
  Pulping with P188
Eucalyptus, paper making material A87
Eucalyptus globulus, paper making material A87
Eucalyptus robusta, paper making material A87
Eucalyptus viminalis, paper making material A87
Evaporation, Murray-Waern system 271
Evaporator-scrubber 274
Everdur 74
  Corrosion 76
Expansion of paper, effect of invert sugar 66
Explosion process P187

F

Fans 118
Feedwater
  Conditioning 222
  Humus, removal of A10
  Oxygen, removal of 225
Felts
  Conditioning A6
  Treating with ammonia P9
  Washing A6
Ferrous alloys, cast 58
Fertilizer, lime sludge as A168
Fertilizer industry, paper sacks for A7
Fiber analysis, accuracy of A321
Fiber board, vulcanized A5
Fibers
  Microdissection 250
  Structure 250
Fibrous Raw Materials Testing Committee, report 199
Fillers P296
  Dyes, effect on 269
  Opacifying effect A5
  Retention 197
  Titanium dioxide as 247
Finishing department, incentives in 174
Fire resistant paper A5
Flax hemp rope, paper making material A146
Flax waste, paper making material P146
Flotation, use in deinking A88
Flotation agent, preparation from black liquor P168
Fluorescence analysis A9
Folding endurance
  Beating, effect of 38
  Pigmentation, effect of 38
  Plasticizers, effect of 65
Formaldehyde, effect on pitch 313
Formation number A321
Formation tester 303
Four-foot cord rack 262
Fourdrinier wire 78
Freeness
  Cowles classifiner, effect of 105
  Hydrogen ion concentration, effect of A305
FRITZ, H. E., and JONES, S. B. Comparative head losses in various kind of pipe when unbeaten pulp of certain kinds and consistencies are being pumped 238
FUCHS, WALTER M. Chemical nature of lignin 181
Furfural, determination in sulphite waste liquor 84
Fuzz detector 252

G

Gear drive, beveled 199
General Electric reflectance meter A9
Germany, paper making in A87
Giller tower A168
Gillet size process 197, A296
Glassine paper, drying rate 114
Glucose, use as plasticizer 235
Glue, animal A321
Glycerol
  Plasticizer, use as 63, 235
  Transparent papers, use in A7
Glycols, use as plasticizers 63
Government Printing Office
  Paper testing at A9
  Printer's troubles at A10
Graphic Arts Committee 283
Grappling device, paper handling with . A6
Gray Harbor Pulp and Paper Co. mill .. A19
Greaseproof paper, drying rate 114
Great Northern grinder A170, 318
Green beating tester A10
Green slowness tester A321
Green liquor, chips impregnated with .. P146
GRIFFIN, ROGER C., and McKINLEY, RUSSELL W. Studies of tensile and bursting tests 20
Grinder
  Experimental A170
  Great Northern A170, 318
  Sampo A170
Gummed paper P288

H

Hall Process 318
HASLAM, J. H., and STEELE, F. A. The retention of pigments in paper .. 22
von HAZMBURG, S. S. *See* Clark, James d'A.
Heat cycle of paper mill 276
Heat insulation P8
Heat losses from bare surfaces 110
Heat production, progress report 176
Heat transmission, progress report 176
Heijkenskjold method for yeast 260
Hemicelluloses
  Extraction A88
  Mesquite wood A145
Hemp waste, paper making material .. P146
HEMPHILL, J. W. Insulation specifications for the paper industry 107
HERVEY, DAVID E. Comparative pulpwood growing capacities of southeast Georgia and the fog belt on the North Pacific coast 200
HOCK, CHARLES W. *See* Seifriz, William
Hot plate for sheet making 129
Hydration
  Opacity, effect on 38
  Pigment retention, effect on 37
  Review A188
Hydrogen ion concentration
  Dyes, effect on 269
  Freeness, effect on A305
  Pitch emulsion, effect on 315
  White water recovery process 1
Hydrogen ion indicator 44
Hydrogen ion values A9
Hygrotemper A10
Hypochlorite bleaching 291
HUNICKE, A. BYRON. Relationship of management to technology 244
HUNTER, ELIZABETH. Surface treatment of paper on the fourdrinier machine 326

I

Impact inches 192
Indicators A9
  Hydrogen ion 44
Ink absorption test of paper 242
Inks A10
Insulating materials 107
Integral-furnace boiler 177
Invert sugar as plasticizer 63, 235
Iron, removal from water 17
Iron salts, effect on dyes 269

J

JACKSON, DONALD T., and PARSONS, JOHN L. A universal hydrogen ion indicator 44
JONES, S. B. *See* Fritz, H. E.
Jordan
  Contact inches per minute 192
  Impact inches per minutes 192
  Series A188
Jordan engine, plug structure P188
Jordan plug 300
Jute waste, paper making material P146

K

KEMP, JAMES T. Copper and the copper alloy metals 71
Kneader 199
Knives
  Beater roll, fastening to 188
  Fastening to shaft P8
  Grinding A6
KOCH, C. J. Mechanical design of electrical machinery 116
Kollergang, pulp testing with 193
Kraft process, chips impregnated with green liquor P146
KRESS, OTTO, and MOSS, LAMAR A. Survey of pitch troubles in the manufacture and use of sulphite pulp 306

L

LaQUE, F. L. Cast ferrous alloys in the paper industry 58
Latex
  Boards, use in P7
  Coated paper, use in P288
LEE, JAMES A. Non-fibrous raw materials (1935-1936) 231
Lignin
  Alkali fusion A146
  Alkaline oxidation A145

Ammonia A145
Artichoke stalks A145
Chemical nature 181
Constitution A146
Corn stalks A145
Determination, wood pretreatment effect of A145
Extraction A145
Formula 183
Oat hull A145
Phenol 182
Straw A145
Sulphite waste liquor, determination in 84
Lignocellulose, hydrolysis A19
Lime 231
Lime sludge A168
Lithographic paper 293
Loblolly pine
Digestion, rate of 52
Georgia, growth in 200
Longleaf pine
Digestion, rate of 52
Georgia growth in 200
Luminescence analysis A9

M

Machinery, use of iron for 58
McCREADY, D. W. *See* Nolan, W. J.
McGREGOR, GEO. H. Study of the relation between the chemical and physical characteristics of representative types of pulps 155
McKINLEY, RUSSELL W. *See* Griffin, R. C.
Management, technology and 244
Mannitol, use of plasticizer 63
Margalt suction roll A6
Mechanical pulp
Black spruce compression wood .. 221
Color principle A170
Diethylene glycol, treatment with . P188
Freeness, effect of pH on A305
High grade newsprint A170
Hot grinding A170
Quality A170
Southern pine A87
Mesquite wood, hemicellulose A145
Methanol
Black liquor, recovery from P168
Sulphite waste liquor, determination in 83
Methoxy group, determination in wood A321
MILLER, JAMES D. Materials of Construction developments 43
Mitscherlich pulp, characteristics 155
Moistening device P9
Moisture
Pulp, test of 150
Wood, determination in A321
Moisture resistance, paper A10
MONTGOMERY, A. E. Drying rate for tissue and absorbent paper 112
MOSS, LAMAR A. *See* Kress, Otto
Motors 116
Starting device P8
Mulch paper A7
Mullen test 26
Pressure application, rate of 21
Murray-Waern system of chemical and waste heat recovery 271

N

Newaprint A6
Grinding wood for A170
Newsprint mills, technical control in . A170
Nickel alloys A19
Nickel-copper alloys 74
Ni-resist 58
NIEMCZYK, JOHN. Physical characteristics and printing quality of paper 241
Nitric acid process A170
Nitric acid-benzene, digestion with P187
NOLAN, W. J., and McCREADY, D. W. The rate of digestion of wood in sodium hydroxide solutions 48
Non-fibrous Raw Materials Committee, report 231
Nomy bearing A5
NOYES, H. G. Personnel management development report 202
Numoline, use as plasticizer..... 63

O

Oil absorption test for coated paper 242
Opacity
Hydration, effect of 38
Titanium dioxide, effect of 37
Oxalic acid, recovery from black liquor P168
Oxycellulose, acidity, determination of .. A88

P

Paper
Absorbent, drying rate 112
Acidity
Measurement 89
Nature of 93
Air conditioning A10
Bituminous A7
Burst tests 26
Bursting strength, determination 255
Official method 122
Carbon P8
Catalog, titanium pigments in 248
Cerelose, use of 235
Cigarette P7
Coated, oil absorption test 242
Coating P203
Conductive sparks, determination of A9
Corn sirup, use of 63
Crimping P8
Drying rate 112, 114, 319
Dyeing A203
Enamel coated P288
Expansion, effect of invert sugar 66
Fiber analysis A10
Fire resistant A5
Formation
Measurement A321
Printing quality and 243
Fuzz detector 252
Glassine, drying rate 114
Glucose, use of 235
Glycerol, use of 63, 235
Glycols, use of 63
Graduated drying A296
Greaseproof, drying rate 114
Gummed P288
Handling with grappling devices .. A6
Hydrogen ion concentration 89
Temperature of extraction, effect of 92
White water pH, relation of .. 95
Ink absorption test 242
Invert sugar in 63, 235
Lithographic 293
Longitudinal tester A10
Luminescence analysis A9
Mannitol, use of 63
Moistening device P9
Moisture content, control P8, 185
Moisture regulator P304
Moisture resistance A10
Moisture retention 64
Mulch A7
Mullen test studies 21
Permanency A10
Pick of surface P10
Pigments, retention of 22
Plasticizers 63, 235
Printer's troubles A10
Printing P6
Quality 241
Physical characteristics 241
Proof press as test 243
Proof press for testing 243
Sizing curves 42
Sorbitol, use of 63
Stretch, determination of 253
Official method..... 123
Stretch tests 26
Strength, effect of plasticizers 65
Sulphonated oils, use of 235
Surface, determination of..... P10
Surface coloring, patent review 326
Surface treatment, patent review .. 326
Tensile strength, determination of 253
Official method 124
Studies 20
Tensile tests 26
Tissue, drying rate 112
Titanium dioxide, retention of 36
Total acidity 89
Transparency A5
Transparent A7
Twisting number A10
Water resistance, test of 39
Water vapor permeability, tests of 204
Waterproofing P7
Whiteness, determination of A9
Writing, drying rate 319
Paper industry
Business cycle, relation of 98
Cast ferrous alloys in 58
Diesel engine in 146
Steam requirements 147
Paper machine
Power requirements, analysis 213
Speed, regulation of P9
Torque characteristics 216
Paper making
Starch in 229
Ultraviolet light, use of A321
Paper making materials
Bamboo P146
Beech wood A169
Esparto A87
Eucalyptus A87
Flax hemp tope A146
Flax waste P146
German problems A87
Hemp waste P146
Jute waste P146
Pine wood A169
Pinus insignis A87
Southern pines A87
Wood freed from rosin A187
Paper mills
Bonus in 171
Incentives in 171
Paper sacks A7
Paper stock, effect on dyes..... 269
Paper testing
Bibliography for 1935 68
Instruments 302
Progress report 317
Review for 1935 67
Ultra-violet light in A9
United States Government Printing Office A9
Paper Testing Committee, report 317
Paper textiles A6
Paper web guide P9
Paraffin, device for adding to paper P8
PARSONS, JOHN L. *See* Jackson, D. T.
PARTANSKY, A. M., and BENSON, H. K. Analysis of sulphite waste liquor 81
Patents
Surface treatment of paper 326
United States 55, 217
Patents Committee, report 201
Pebble mill, use in coating 277
Peeling of coated paper 281
Pentoses, determination in sulphite waste liquors 84
Permanganate-chlorine number A10
Personal Management Committee, report 202
PEW, J. C. *See* Pillow, M. Y.
Phenols, digestion of wood with A170
Phospyhates, pretreatment of wood with P187
Pick, measurement of P10
Picking of coated paper 281
Pigments
Paper, retention of, by 22
Beating, effect of 36
PIKE, N. R. Invert sugar as a plasticizer in paper 63
PILLOW, M. Y., SCHAEFER, E. R., and PEW, J. C. Occurrence of compression wood in black spruce and its effect on properties of ground wood pulp 220
Pine, rate of growth 200
Pine oil as plasticizer 65
Pine wood
Digestion, rate of 52, 53
Sulphate pulp from A169
Pinus insignis, paper making material A87
Pipe insulation, specifications 107
Pipes, pulp losses in 238
Pitch in pulp
Bibliography 316
Formaldehyde, effect of 313
Properties 311
Pulp, determination in A321
Pulp, removal from 315
See also Spruce pitch.
Pitch emulsion 314
Beating, effect of 314
Hydrogen ion concentration effect of 315
Pitch troubles 306
Plant cell walls, construction 250
Plants, cultivated 322
Plasticizers 63, P188, 235
Plasticizing, mechanics of 63
Poplars, hybridization 325
Porosity of paper A10
Power plants, insulation 108
Power transmission, progress report .. 176
Press board, drying control by electrical resistance A304
Press felt, care of 137, 138
Press section, power requirements 214
Printer
Coated paper difficulties 281
Paper and 283
Paper troubles A10
Printing, relation of smoothness A10
Printing industry, air conditioning in .. A10
Printing paper
Guide lines on..... P8
Three ply P6
Titanium pigments in 248
Proof press, use for paper testing 243
Proportioner (for sheet making)..... 129
Protein, vegetable, in coating papers .. P288
Pulp
Alpha-cellulose-copper number relation 161
Alpha-cellulose-strength-relation 163
Beating strength tests 160
Bleaching 289
Chlorine P203
Review A203
Chemical characteristics 155
Cooking time A305
Copper number A10
Strength ratio 163
Degradation rate 160
Degree of beating A10
Freeness
Cowles classifiner, effect of 105
Hydrogen ion concentration, effect of A305
Losses in pipes 238
Luminescence analysis A9
Mercerization A305, P305
Moisture, test for 150
Moisture distribution 151
Nitration, preparation for P305
Permanganate-chlorine number .. A10
Physical characteristics 155
Pitch, removal of 315
Pumping characteristics 239
Purification A305, P305
Rayon A304, A305
Resin content, determination of A321
Roe-Kung number A10
Sampling 150
Solubility curve A304
Titration chlorine number A10

Viscosity 160
Alpha-cellulose relation 161
Copper number relation 161
Strength ratios 162
Water content, effect on mercerization A305
Western hemlock, color principle .. A170
Pulp classifier 302
Pulp mill, heat cycle 276
Pulp screen 298
Pulp testing, kollergang in 193
Pulpwood
Cord rack 262
Cost calculations 267
Georgia, growth in 200
Moisture, estimation of 262
North Pacific coast, growth in .. 200
Physical evaluation 262
Railroad scaling 265
Volume, determination of 262
Weight (dry), determination of 262
Pumps
Centrifugal A7
Plunger A7
Vacuum A6
Pyrites, roasting P169

Q

Quartz lamp A9

R

Rag pulps, characteristics 155
Raylick B A170
Rayon, pulps for A304, A305
Red brass 78
REED, ROBERT F. Lithography on coated paper 281
REED, ROBERT. Recent developments in the technology of lithographic papers 293
Reels, power requirements 216
Refiner 299
Disc as 256
Reflectance meter A9
Resin soap, combustion 274
Riffling, effect on consistency A6
RIVISE, C. W. Patents Committee development report 201
Road binder, sulphite waste liquor as. .. A170
Roe-Kung number A10
ROGERS, H. W. The characteristics of power requirements for paper machines 213
Roll cutting machine P9
Roof deck, insulation 110
Roofing, colored granules P6
ROSENCRANTS, F. H. Improved Murray-Waern system of chemical and waste heat recovery 271
Rosin 234
Cooking A296
Heat, effect of 312
Properties 311
Rosin emulsion P296
Rosin size, losses in manufacture A296
Rosin sizing 197
Rotameter, balanced pressure 268
Rotary cutter 302
RUE, JOHN D. What do we know about bleaching? 289

S

Salt cake 232
Sampo grindstone A170
Sandberg-Sundblad recovery system. .. A168
Save all, chemical control 1
Save all trays 199
Saws, circular, protective device P8
Scale formation, prevention in boilers.... 224
Scales, paper 129
SCHAEFER, E. R. *See* Pillow, M. Y.
Schopper tension tester A10
Screens A5, A6, P6
Rotary P6
SCRIBNER, B. W. Developments in paper testing during 1935 67
SCRIBNER, B. W. Progress report of paper testing committee for 1935-6. 317
SEIFRIZ, WM., and HOCK, CHAS. W. The structure of paper pulp fibers 250
Semi-cellulose P188
Shake P6
Shake head 190
Shake screen P8
SHEEHAN, JOSEPH A. Control of moisture content in paper undergoing progressive drying 185
Sheet machine 128
Sheet making process 127
Temperature, effect of 194
Sheet mold 133
Sheet press 137
SHOEMAKER, M. J. Catalytic removal of iron from water 17
Shower pipe A5
Silicate cements A10
Sinclair synchrisiscope A9
Size
Dyes, effect on 269
Starch, use of, as 229
Size making, losses A296
Sizing
Bewoid process A296
Rosin 197
Rosin emulsion in P296
Starch 197
Surface, patent review 326
Theories A288
Wax emulsion P296
Slash pine, growth in Georgia 200
Slowness tester 302, A321
Smelting furnace P146
Air-cooled form P168
Soda ash 231
Furnace, stack losses, recovery 45
SODERBERG, FRED A. Paper mill variables and their effect upon color (abstract) 269
Sodium acetate, use in cigarette paper.. P7
Sodium benzoate, use in cigarette paper.. P7
Sodium bitartrate, use in cigarette paper P7
Sodium carbonate, effect upon white water clarification 3
Sodium hydroxide
White water clarification, effect on.. 2
Wood digestion, rate of 48
Sodium silicate 233
Transparent paper, use in A7
Sodium sulphate, electrical recovery.... 45
Sorbitol as plasticizer 63
Soundview Pulp Co. mills A19
Southern pine, paper making material.. A87
Spruce pitch
Aging 312
Heat, effect of 312
Properties 312
See also Pitch
Spruce wood, rate of digestion with sodium hydroxide 48
Stack gases, electrical precipitation..... 45
Stacks, insulation 108
Stainless steels 59
Starch 234
Adhesive, use as 229
Beater application 230
Coated paper, use in 230
Enzymes, modification by 230
Pigment retention, relation to..... 24
Size, use as 229
Sizing 197
Steam boilers 177
Steam turbine A19
Insulation 108
STEELE, F. A. *See* Haslam, J. H.
STEVENSON, LOUIS T. The paper industry and the business cycle 98
Stirling boiler 177
Stock, dry weight, regulation P8
Stock inlet P8
Voith high pressure A6
Stock preparation 189
STOUT, A. B. Origin and development of cultivated plants 322
STRASSER, JEROME. New applications and developments in the use of starch in paper 229
Straw, pulping at sugar plants A146
Stretch
Paper, determination of 253
Official method 123
Plasticizers, effect of 65
Suction box P6
Covers A6, 199
Suction screen, flat plate 199
Suction rolls A6
Sugars, determination in sulphite waste liquors 85
Sulphate mills, heat economy in recovery system A168
Sulphate paper, effect of heat..... A7
Sulphate pulp
Bleaching A203
Purification A305
Sulphide ore, roasting P169
Sulphite cooking liquor
Composition A168
High calcium oxide A169
Sulphite digesters
Circulation system P169
Indirect heating P169
Sulphite preheater, cleaning P169
Sulphite process
Blow off gases A169
Equipment developments 298
Pitch troubles 306
Recovered liquor in A169
Sulphite pulp
Hypochlorite bleaching A203
Southern pine A87
Two-stage process A169
Sulphite waste liquors 198
Analyses 86
Analysis 81
Composition 260
Concentration P169
Hydrogen ion concentration..... A170
Patent review 11, 28, 31
Road binder A170
Sugar content 86
Sulphurous acid, recovery of..... P169
Utilization 298
Yeast from 259
Sulphonated castor oil, plasticizer..... 65
Sulphonated oils, use in paper 235
Sulphur 233
Sulphite waste liquor, determination in 82
Sulphur burner A168, 298
Sulphur dioxide, corrosion of copper by.. 76
Sulphur trioxide, formation of A168
SULTZER, N. W., and BEAVER, C. E. Alkali recovery by electrical precipitation 45
Surface coloring of paper, patent review. 326
SUTHERLAND, D. MANSON, JR. Refining action of discs 256
See also Midwell, G. Lamont, Jr.
Synchrisiscope A9

T

Tearing strength
Beating, effect of 38
Pigmentation, effect of 38
Plasticizers, effect of 65
Technical control 244
News print mills A170
Tensile test 20
Beating, effect of 38
Paper, determination of 253
Official method 124
Pigmentation, effect of 38
Plasticizers, effect of 65
Rate of application of load 20
Tension regulator P9
Test sheets 127
Calendering 142
Drier 139
Testing 141
Uniformity 132
Textiles, paper A6
Thickener P9
Thickness
Beating, effect of 38
Pigmentation, effect of 38
Thomas meal, sacks for A7
THOMPSON, SANFORD E. Improved pulp and paper quality through incentives 171
Thorsen-Héry beater 60
Tissue machine A7
Tissue paper
Drying rate 112
Titanium pigments in 248
Titanium dioxide
Coating, use in P203
Filler, use as 242
Retention 36
Titanium pigments 233
Application, methods of 248
Commercial applications 248
Fillers, use as 247
Properties 247
Titanox as filler 247
Top press roll
Downingtown drive A6
Drive 199
Transparent paper P5, A7
Trees, breeding 325
Tubes, fibrous P8
Turpentine, sulphate, purification P168
Twisting number A10

U

ULM, R. W. K. *See* Browning, B. L.
Ultraviolet light, use in paper mill..... A9, A321

V

Vacuum pumps A6
VANCE, JOHN F. The paper maker and the graphic arts 283
Vapometer 205
Vickery doctor A6
Viscosity, determination of A321
Voith high pressure stock inlet A6
Vortex beater A188, 300

W

Wagner furnace A168
Insulation 109
WALKER, GEORGE K. Grinding pulp with Great Northern grinders 318
Washing, effect on pigment retention.... 24
Waste heat boiler, insulation 109
Waste heat recovery, Murray-Waern system 271
Waste paper
Dehbering 102
Deinking A88
Detrashing 102
Water
Analysis A321
Birm in purification 18
Dyes, effect on 269
Filter plants A10
Freezing in pipes 110
Iron, removal of 17
Purification 197
Water marks, control of position P8
Water pipes, insulation 109
Water resistance
Cobb test 40
Paper, tests 39
Water vapor permeability
Test for 204
Test sheet area, effect of 209
Vapor pressure, effect of 206
WATERS, VINCENT F. The rate of drying of glassine and greaseproof paper 114
Wax, waterproofing with P7
Wax emulsion P296
Waxes 235
WEHMER, P. F. Report of Subcommit-

tee on Chemical Methods 79
WEST, CLARENCE J. Report of Committee on Abstracts and Bibliography.. 237
WEST, CLARENCE J. United States patents on paper making 55, 217
WEST, CLARENCE J. Waste liquors and gases of the paper industry.....11, 28, 31
Western hemlock, rate of growth 201
Western hemlock pulp, color principle.. A170
WESTON, HARRY E. Some paper making equipment observations 297
Wet press felt, cleaning device P8
White pine, rate of digestion 52
White water
Clarification with alkali 4
Hydrogen ion concentration 2, 95
Sampler 302
Whiteness of paper, determination of.... A9
WILLETS, WM. R. Effect of beating and pigmentation on sheet properties.. 36
WILLETS, WM. R. Titanium pigments in paper making 247
Williams finish and formation tester.... A10
WILMER, F. P. Heat and power production and transmission 176
Winders
Electric A8
Power requirements 216
Wire seam A6
Wire section, power requirements 213
Wires, dirt on A6
Wood
Barking P8
Barking in forests A7
Compression 220
Digestion with sodium hydroxide, rate of 48
Methoxyl group, determination of... A321
Moisture, determination of A321
Nitric acid, oxidation with A170
Phenols, digesting with A170
Pretreatment P187
Rosin-free, digestion of A187
Wood conveyor, discharge system A6
Wood grinder P170
Electric feed regulation P170
Writing paper, drying rate 319

Y

Yamada hydrogen ion indicator 44
Yankee machine A304, P304
Yeast, production from sulphite waste liquor 259
YOUTZ, M. A. Fibrous raw materials testing developments 199

Z

Zeolite, synthetic 18
Zeolite deconcentrator 179
Zinc pigments 233, P288

Paper Companies Join TAPPI

The Executive Committee of the Technical Association of the Pulp and Paper Industry has announced that the following companies have become corporate members:

Blandin Paper Company, Grand Rapids, Minn., manufacturers of newsprint and groundwood pulp, to be represented by R. M. True, technical director.

Chillicothe Paper Company, Chillicothe, Ohio, makers of book papers, lithographic, offset, sulphite bond, writing, envelope, papeterie and tablet papers, to be represented by E. F. Bearce, vice president and chief engineer.

Ignace Spiro Sohne, Bohm-Krumau, Czechoslovakia, makers of printing papers, imitation chromo board, leather boards, sulphite, kraft and mechanical pulps, to be represented by Rudolf Klement, managing director.

Kalamazoo Vegetable Parchment Company, Parchment, Mich., makers of waterleaf, waxing, waxed, vegetable parchment, sulphite, manifold, bond and paper specialties, to be represented by Ralph Hayward, president and general manager.

Australian Paper Manufacturers, Ltd., Melbourne, Australia, at present the only paper manufacturing concern operating in Australia, and makers of kraft paper, paperboards, strawboards, sulphite papers, roofing felt and other papers. The company will be represented by W. D. Brookes, assistant managing director.

Sonoco Products Company, Hartsville, S. C., makers of test jute liner, manila lined board and other board specialties, will be represented by James L. Coker, president.

Great Falls Paper Co. To Rebuild

[FROM OUR REGULAR CORRESPONDENT]

GREAT FALLS, Mont., July 18, 1936—Plan to rebuild almost immediately has been announced by officers of the Great Falls Paper Company, burned out recently in one of the most spectacular fires in Great Falls for several years.

Detailed plans for the new building are not yet worked out, Frank E. Flaherty, vice president of the company, states, although it is to be one story, of earthquake proof and fireproof brick and tile construction, and will probably be of a design similar to the burned wooden building. The new plant will be modern in every way, and will have a fire sprinkling system installed. Site of the building is to be on the same property as the former company offices, along the Great Northern Railway property, 600 Second street south.

The paper company reopened for business with temporary offices in the Old Wilbur Transfer and Storage Company building, 420 Second street south, and is filling a number of orders. Several carloads of paper were enroute to the distributing house here when the stock was destroyed, and have arrived, enabling the company to "carry on."

Port of Albany Can Handle All Traffic

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., July 20, 1936—At a hearing during the week before the Interstate Commerce Commission it was brought out by counsel for the Port of Albany that the local seaport can handle all the traffic that might come to it as a result of port rate adjustments. Replying to a charge that adjustment of shipping costs by rail to the port from the Middle West, such as the Albany Port Commission asks, would enable the port to dominate the Atlantic seaboard marine trade, the council requested the federal body to adjust the alleged unfair situation either by decreasing rates at Albany or increasing them at other North Atlantic ports. The assurance that the port here is ready and has the capacity to meet whatever increased trade may result from the adjustment came after Henry F. Daugherty, representing Michigan paper mills, said it would throw the shipping picture out of joint. The disruption, he said, would offset any advantage the Michigan paper manufacturers may obtain as a result of lower freight rates on pulp wood through the local port. In explaining the paradox, Mr. Daugherty said the trade would be so heavy through Albany it would choke the port and force shippers to use other ports at higher rates. There is no other port in the country that has the cheap facilities to the Middle West that Albany has, he said, and the city can serve the area cheaper than any other port in the country. Other opponents declared that the proposed rates for the local port, approved by Examiner Bardwell of the Interstate Commerce Commission, if they become effective would give Albany an unfair advantage. It is expected that the decision of the Interstate Commerce Commission will be made known in a few weeks.

Sweetland Pressure Filter

Oliver United Filters, Inc., have just issued an interesting bulletin entitled "Sweetland Pressure Filter." It is stated that "Although the trend in most process industries is distinctly toward the use of continuous vacuum filtration because of its obvious advantages, there are many cases where only pressure filtration can be used effectively. For such purposes the modern Sweetland pressure filter offers many advantages. It is the standard pressure filter for the process industries. Years of service on a great variety of products have established its efficiency and low-cost operation. It is an exceptionally clean filter, has high capacity and is easy to handle and maintain. Features of the Sweetland filter which account largely for its wide popularity are: high capacities; high washing efficiency; automatic discharge of filter cake without hand-labor; no leakage; specially adaptable for use where filter aids are required. The constant visibility of filtrate from each leaf, made possible by individual sight glasses in each outlet, is an important operating feature. It helps to maintain high operating efficiency."

New TAPPI Members

The executive committee of the Technical Association of the Pulp and Paper Industry has announced that the following have been elected to membership:

Clarence L. Buck, associate chemist, Government Printing Office, Washington, D. C., is a 1920 graduate of Beloit College and was formerly with the Newport Chemical Co., Carrollville, Wis., and the Bureau of Standards, Washington, D. C.

Edward W. Butzler, chemical engineer, Hall Laboratories, Inc., Pittsburgh, Pa., is a 1930 graduate of Carnegie Institute of Technology and was formerly with the Crucible Steel Company and the Bureau of Mines, Pittsburgh.

Jose B. Calva, consulting chemical engineer, Calva, Tomsicek & Co., St. Paul, Minn., is a graduate (1919) of the University of Pennsylvania, and (1928) the National University of Mexico, and was formerly with Baeder Adamson Co., Philadelphia, and the Minnesota Mining and Manufacturing Company, St. Paul, Minn.

Frederick D. Elliott, laboratory assistant, Michigan Carton Company, Battle Creek, Mich.

Elis A. Ennevaara, research chemist, British Columbia Pulp and Paper Company, Port Alice, B. C., is a 1923 graduate of the University of Helsingfors. He was formerly technical director of Kymmene A/B, Finland; chemist for the Canadian International Paper Company, Gatineau, P. Q.; salesman for Restigouche Company, Ltd., and chemist for Fraser Companys, Ltd., Edmundston, N. B.

Arthur E. Gordon, advertising manager, PAPER TRADE JOURNAL and Lockwood Trade Journal Company, is a 1920 graduate of Fordham University.

Davis E. Hervey, chief of management party, U. S. Forest Service, Atlanta, Ga., is a 1933 graduate of the University of Washington.

Elliott G. Heslop, assistant chemist, Provincial Paper, Ltd., Port Arthur, Ontario, is a 1930 graduate of the University of Toronto. He was formerly with the Abitibi Power and Paper Company, Smooth Rock Falls, Ont., and the Brompton Pulp and Paper Company, East Angus, P. Q.

Donald T. Jackson, research chemist, Hammermill Paper Company, Erie, Pa., is a 1926 graduate of Montana State College and received his Ph. D. degree from the University of Pittsburgh in 1932.

Alfred E. Jacquot, technical control department, Crown Willamette Paper Company, West Linn, Ore., and Camas, Wash., is a 1933 graduate of the Oregon State College.

Eugene J. Kane, research chemist, Nekoosa-Edwards Paper Company, Port Edwards, Wis., is a graduate of Massachusetts State College and attended the Institute of Paper Chemistry.

Albert D. King, development and research department, Dennison Manufacturing Company, Framingham, Mass., is a 1932 graduate of the Massachusetts Institute of Technology and was formerly with the Agfa Ansco Corporation, Binghamton, N. Y.

John D. Lyall, mechanical engineer, A. E. Broughton & Co., Glens Falls, N. Y., is a 1930 graduate of Cornell University and was formerly with the International Paper Company, Glens Falls, N. Y., and the Mohawk Paper Mills, Cohoes, N. Y.

Thomas J. McGuff, chief chemist, Hollingsworth & Vose Company, E. Walpole, Mass., is a 1922 graduate of the University of Maine.

S. Roy Turner, mill manager, North American Pulp and Paper Corporation, Cheboygan, Mich, is a 1916 graduate of Queen's University, Kingston, Ontario. He was formerly plant engineer for the Canadian International Paper Company, Hawkesbury, Ontario; Spanish River Pulp and Paper Company, Espanola, Ontario; Canadian Ingersoll-Rand Company, Sherbrook, P. Q.; International Paper Company, Piercefield, Fort Edward and Glens Falls, N. Y., and assistant manager of the Howard Smith Paper Mills, Cornwall, Ontario, and Windsor Mills, P. Q.

Milton G. Schmitt, chemist, Thilmany Pulp and Paper Company, Kaukauna, Wis., attended the University of Wisconsin and the Institute of Paper Chemistry.

Reinhold A. Vogt, chemist, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis., is a 1932 graduate of Lawrence College and was formerly chemist for the Interlake Pulp and Paper Company, Appleton, Wis.

Arthur A. Weinland, chemist, Lee Paper Company, Vicksburg, Mich., is a 1931 graduate of Michigan State College.

Gustavus J. Esselen, consulting chemical engineer, 857 Boylston street, Boston, Mass. (reinstated).

Robert M. True, technical director, Blandin Paper Company, Grand Rapids, Minn., and formerly of the Chemical Paper Manufacturing Company, Holyoke, Mass. (reinstated).

E. O. Houghton, Restigouche Corporation, Ltd., Campbellton, N. B. (reinstated).

C. W. Richards, technical service, Krebs Pigment and Color Corporation, Newport, Del., formerly of the Oxford Paper Company, Brunswick, Me. (reinstated).

G. J. Manson, Brantford, Ontario (reinstated).

Donald K. Pattilloch, president, Pattilloch Processes, Inc,. 24 School street, Boston, Mass. (reinstated).

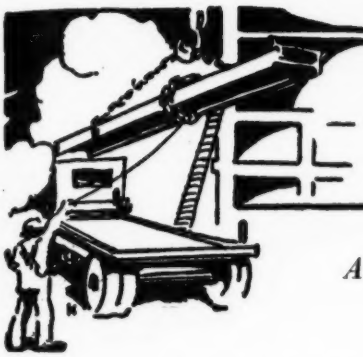
Form To Be Used by TAPPI Committees

In order to facilitate the work of the new Committee on Educational Cooperation of the Technical Association of the Pulp and Paper Industry it has been found advisable to require that information contained in a request for financial assistance for a committe project should be grouped under the following headings and limited to one or two typewritten pages:

A. Name and definition of work to be carried out.
B. Description of subject and results desired.
C. Need for the results desired and assurance that it has not been done elsewhere.
D. Where and by whom the work will be done.
E. Estimated time and cost.

For the current year the sum of three thousand dollars has been appropriated by the Executive Committee of TAPPI for the use of committees in their various activities. This fund is administered in the form of research grants by the Committee on Educational Cooperation. Committees requiring financial assistance for their projects should submit their requests to their respective Divisional chairmen for approval, after which the requests go to the Committee on Educational Cooperation for final action.

It is hoped that this new TAPPI research fund will make possible the availability of technical information of value to the industry within a much shorter time than heretofore and will provide a greater opportunity for usefulness on the part of the committee organization of the Association.



CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

Cloquet, Minn.—The Wood Conversion Company, First National Bank Building, St. Paul., Minn., manufacturer of insulating board products, building papers, etc., has plans under way for extensions and improvements in mill at Cloquet, including installation of additional equipment for increase in present capacity. Work will be carried out during the summer and is estimated to cost close to $150,000, with machinery. The plant has been running on a high capacity schedule for some time past, including 24-hours a day for six days a week, and 16 hours on Sunday. E. W. Davis is general manager.

St. Louis, Mo.—The Moses Paper Box Company, 200 Elm street, manufacturer of paper boxes and containers, has acquired property of Langenberg Manufacturing Company, Euclid avenue, and will use for expansion.

Pittsburgh, Pa.—The Ames Safety Envelope Company, recently organized with capital of $20,000, will take over and succeed to company of same name, with local offices in the Berger Building, manufacturer of special commercial envelopes, etc. John Fitzgerald is president of new company.

Great Falls, Mont.—The Great Falls Paper Company is considering early rebuilding of portion of storage and distributing plant, recently destroyed by fire. Loss estimated close to $50,000, including equipment. Structure is owned by Flaherty Brothers, Great Falls.

Kansas City, Mo.—Hall Brothers, Inc., Grand and S. E. 26th streets, manufacturer of card stocks and specialties, plans remodeling and improving of plant, including installation of equipment. Work is scheduled to begin soon and is estimated to cost over $30,000. Herbert V. Jones & Co., Bryant Building, city, will supervise work.

Hoboken, N. J.—The Universal Folding Box Company of New Jersey, Inc., recently formed by officials of the Universal Folding Box Company, 94 34th street, Brooklyn, N. Y., manufacturer of folding paper boxes and containers, has arranged for financing in amount of $25,000 for remodeling and improving of former plant of Gatti Paper Stock Company, Monroe street, Twelfth to 13th streets, Hoboken, which has been acquired for a new plant, as lately referred to in these columns. Work will be placed under way at once and it is proposed to have plant ready for service at early date. Entire project is reported to cost close to $50,000, including equipment.

Kalamazoo, Mich.—In the Construction News in the issue of the Paper Trade Journal of July 9 it was stated that "C. A. Hubbard Papers, Inc., has been organized to operate a local mill for the manufacture of paper products of various kinds." This statement was inaccurate as the new corporation is merely a change in form for the operation of the business carried on for a long number of years by C. A. Hubbard, which is that of manufacturing on contract his usual line of thin papers.

Garfield, N. J.—The Empire Central Box Corporation, Garfield, manufacturer of paper boxes and containers, a Delaware corporation, has filed notice of increase in capital from $100,000 to $150,000, and 6,000 to 10,000 shares stock, no par value, for general expansion.

Hennepin, Minn.—The Hennepin Paper Company, 803 Hennepin avenue, Minneapolis, Minn., has developed a new product at its mill at Hennepin, and will produce under large capacity schedule at once, comprising an unfinished felt specialty, designed for use in building construction. The mill will establish a 24-hour working day basis, divided into three shifts of 8 hours each.

Philipsdale, R. I.—Fire recently damaged a portion of mill of Bird & Son, Inc., Dexter Road, manufacturer of roofing papers, insulating specialties, etc. An official estimate of loss has not been announced. The damage will be replaced. Company headquarters are at East Walpole, Mass.

Salem, Mass.—The North Shore Waste Paper Company, Jefferson avenue, has awarded general contract to the Walsh Construction Company, Inc., 16 Briggs street, Salem, for one-story addition, about 21 x 52 feet, for storage and distribution. Work will be placed under way at once.

Rochester, N. Y.—The Eastman Kodak Company, Kodak Park, has begun construction of new addition to plant, to be used for production of photographic and other processed papers. It will be five-story and basement, 120 x 565 feet, estimated to cost close to $500,000, including equipment. Contract for structural steel framing was let recently to the Jones & Laughlin Steel Corporation, Third street, Pittsburgh, Pa. The Ridge Construction Company, Rochester, is general contractor.

Buffalo, N. Y.—The Buffalo Box Factory, 30 Scoville avenue, manufacturer of corrugated paper boxes and containers, affiliated with the Hinde & Dauch Paper Company, Sandusky, Ohio, is running on increased production schedule at plant, giving employment to about 70 operatives in different departments. It is expected to hold to this basis for an indefinite period.

Tama, Iowa—Fire recently damaged a portion of local mill of the Central Fibre Products Company, Inc., manufacturer of straw board, chip board and kindred specialties. An official estimate of loss has not been announced. The damage will be replaced.

Charleston, S. C.—The West Virginia Pulp and Paper Company, 230 Park avenue, New York, N. Y., has placed contract with the Goslin-Birmingham Manufacturing Company, Birmingham, Ala., for new evaporator

for black liquor production of kraft paper manufacture, to be installed in new mill at Charleston, previously noted in these columns. The unit will be of large and heavy type, with heating surface of 48,000 square feet. Castings required for the production of the evaporator will require about 15 railroad cars for transportation to new mill site, where assembling will be carried out.

Toronto, Ont.—Staunton's, Ltd., 944 Yonge street, manufacturer of wall paper products, has concluded negotiations for purchase of tract of about 5 acres of land at Brentwood, Englinton and Vanderhoof avenues, Leaside district, as site for new mill, for which plans will be prepared at once. It will be two-story, 100 x 500 feet, estimated to cost over $125,000, with equipment. New unit will be equipped to give employment to about 250 persons. It is proposed to begin work on superstructure in August and to have mill ready for operation late in October. Large increase in present output will be arranged. Mathers & Haldenby, 96 Bloor avenue West, Toronto, are architects.

Toronto, Ont.—Paper Dispensers, Inc., Green Bay, Wis., manufacturer of paper containers, has concluded arrangements with Moncrieff & Endress, Ltd., 20 Hayter street, Toronto, manufacturers' agent, for the production of its line of paper dispensers at Toronto, for the Canadian market. Large capacity will be developed by last noted company.

New Companies, Etc.

Chicago, Ill.—Morris Paper Stocks Corporation, 1012 South Fairfield street, has been organized with capital of 20 shares of stock, no par value, to deal in paper products of various kinds. Raymond J. Silverberg is one of the principal incorporators.

East Orange, N. J.—The Tru-Tyle Board Company, Inc., care of New Jersey Registration & Trust Company, 525 Main street, East Orange, representative, has been incorporated under State laws with capital of 1,000 shares of stock, no par value, to manufacture and deal in wall board products.

New York, N. Y.—Colonial Specialties Company, Inc., has been chartered with capital of 200 shares of stock, no par value, to manufacture and deal in paper products. New company is represented by Kieban & Bernstein, 280 Madison avenue, New York, attorneys.

Indianapolis, Ind.—The Indianapolis Paper Container Company, Indianapolis, has filed preliminary notice of company dissolution under State laws.

Taylor Bulletins

The Taylor Instrument Companies, Rochester, N. Y., has just issued two attractive bulletins entitled "The Taylor Beater Roll Pressure Recorder" and "Facts from the Grinder Room."

The bulletin on beater roll pressure recorders covers a brand new Taylor development. The instrument involves a principle of force measurement developed and successfully used by Taylor Engineers for several years. Two years of service on beaters in both U. S. and Canada have revealed startling facts as to its value on this application.

The grinder control bulletin speaks for itself. Taylor's automatic control of grinding temperature has been a recognized success from the start, but the fact remains that a large majority of the mills have not yet taken advantage of the lower conversion costs and higher quality product which it affords on all types of grinders. This bulletin presents the facts of the case--based on actual tests.

B. W. Thomas Leaves Carthage Papermakers

[FROM OUR REGULAR CORRESPONDENT]

CARTHAGE, N. Y., July 13, 1936—Announcement is made here of the resignation of Bert W. Thomas as assistant treasurer of Carthage Papermakers, Inc., which he was instrumental in organizing a few years ago. His future plans are undetermined although it is expected that he will continue his connections with the industry. It was largely through the efforts and influence of Mr. Thomas in 1932 that the Carthage Pulp and Board Mill was restored to active operation to become among the largest industries in this section. Previously he has spent over thirty years in the paper industry and was office manager of the mill of the Carthage Pulp and Board Company at the time of its shutdown. Under his management the company was formed partly to relieve the unemployment situation and at present about 75 hands are employed. An agreement was made under a five-year contract with Stroud & Co., of Philadelphia, owners of the mill, to permit operation by the new organization by payment of taxes, upkeep of the buildings and machinery, and insurance. At the same time the village agreed to reduce the mill property tax assessment from $200,000 to $5,000 if the mill were operated and relief workers employed. It was only by this help that the mill was able to operate successfully and Mr. Thomas also paid tribute to William J. Cassidy and Charles Miller, who gave up positions in the Brownville board mill to aid him. The company was formed as a stock organization with a nominal capitalization of $7,500.

E. J. Trimbey Gets Patent on Pulp Screen

[FROM OUR REGULAR CORRESPONDENT]

GLENS FALLS, N. Y., July 20, 1936—Announcement is made that a patent has been issued to Edward J. Trimbey, of the Trimbey Machine Works, on his invention of a liquid pulp screen. The application for patent was filed in 1935 and was based on two claims, both being granted by the examiners. The description of the invention follows:

"In a machine for screening masses of solids in liquid vehicles, a screen of the rotary cylindrical outflow type having a horizontal axis of rotation, one end portion of the screen being conically tapered to form at its extremity a refuse discharge port of considerably smaller diameter than that of the main portion of the screen. A means for delivering unscreened liquid stock to the interior of the screen at the end thereof remote from the discharge port. A reservoir disposed underneath and adjacent the bottom of the screen and arranged to maintain a pond of screened liquid stock in which the bottom portion of the screen is partially immersed, and a shower pipe located within the conically tapered portion of the screen and arranged to direct a shower against the interior screen surface of the conically tapered portion for cleaning the refuse matter prior to discharge thereof through the port."

Estate of Herbert E. Harmon

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., July 20, 1936—The estate of the late Herbert E. Harmon, secretary of Knowlton Brothers Inc., is valued at $24,500, according to a document filed with the county clerk. The entire estate is left to the widow, Mrs. Helen Harmon. His will was written by himself in 1928 and was brief. His wife renounced executorship and a daughter, Mrs. Francis Gamble, was appointed to manage the estate as executrix. The petition filed for probate of the will estimates the personalty at not over $12,500 and the realty not over $12,000.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING JULY 18, 1936

CIGARETTE PAPER

Champagne Paper Corp., *Normandie*, Havre, 278 cs.; Standard Products Corp., *Normandie*, Havre, 26 cs.; M. Speigel & Sons Co. Inc., *Pres. van Buren*, Genoa, 5 cs.

WALL PAPER

———, *Bremen*, Bremen, 11 cs.

WALL BOARD

Jonaneson Wales & Sparre, Inc., *Drottningholm*, Gothenburg, 371 bdls.

NEWSPRINT

N. Y. Times, *Markland*, Liverpool, N. S., 372 rolls; N. Y. Tribune, Inc., *Markland*, Liverpool, N. S., 1,434 rolls; World Telegram, *Markland*, Liverpool, N. S., 593 rolls; Brooklyn Daily Eagle, *Markland*, Liverpool, N. S., 338 rolls; Westchester Newspapers, Inc., *Markland*, Liverpool, N. S., 52 rolls; Clinton Paper Corp., *Markland*, Liverpool, N. S., 722 rolls; Perkins Goodwin & Co., *Berlin*, Bremen, 470 rolls; Jay Madden Corp., *Berlin*, Bremen, 131 rolls; Jay Madden Corp., *Sagoporack*, Kotka, 596 rolls; H. Reeve Angel & Co. Inc., *Sagoporack*, Kotka, 95 rolls; Walker Goulard Plehn Co., *Sagoporack*, Kotka, 38 bls.; N. Y. Evening Journal, *Eli*, Quebec, 7,405 rolls.

PRINTING PAPER

Steiner Paper Corp., *Berlin*, Bremen, 25 cs.; Steiner Paper Corp., *Edam*, Rotterdam, 8 cs.; Steiner Paper Corp., *New York*, Hamburg, 8 cs.; Phoenix Shipping Co., *New York*, Hamburg, 8 cs.; The Morilla Co., *Gerolstein*, Antwerp, 12 cs.; Dingelstedt & Co., *Bremen*, Bremen, 30 cs., 37 crates; Walker Goulard Plehn Co., *Sagoporack*, Kotka, 23 bls.

PACKING PAPER

A. J. Bullinger, *Edam*, Rotterdam, 8 cs.

DRAWING PAPER

H. Reeve Angel & Co. Inc., *American Merchant*, London, 2 cs.

FILTER PAPER

H. Reeve Angel & Co. Inc., *American Merchant*, London, 7 cs.

BRISTOL BOARDS

———, *American Merchant*, London, 2 cs.

MARBLE PAPER

Tamm & Co., *Black Tern*, Antwerp, 1 cs.

BARYTA COATED PAPER

Globe Shipping Co., *Bremen*, Bremen, 35 crates, 14 cs.; Atlantic F'd'g. Co., *New York*, Hamburg, 19 cs.

SURFACE COATED PAPER

J. J. Gavin, *New York*, Hamburg, 9 cs.; C. Happel, *New York*, Hamburg, 24 cs.

BASIC PAPER

Dingelstedt & Co., *Bremen*, Bremen, 7 cs.

PHOTO PAPER

———, *New York*, Hamburg, 2 cs.

DECALCOMANIAS

Sellers Transportation Co., *Bremen*, Bremen, 22 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *Scythia*, Liverpool, 35 cs. (duplex.)

TRANSFER PICTURES

Rohner Gehrig & Co., *Bremen*, Bremen, 18 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., *Scythia*, Liverpool, 1 cs.

WRITING PAPER

Strathmore Paper Co., *Aquitania*, Southampton, 2 cs.

STENCIL PAPER

American Express Co., *American Merchant*, London, 2 cs.

TRACING PAPER

Titan Shipping Co., *Bremen*, Bremen, 10 cs.

CARD BOARD

American Express Co., *New York*, Hamburg, 50 cs.

PAPER TUBES

———, *New York*, Hamburg, 91 cs.

STRAW BOARDS

A. Vuyk, *Edam*, Rotterdam, 48 rolls.

MISCELLANEOUS PAPER

Corn Exchange Bank Trust Co., *Sanyo Maru*, Kobe, 12 cs.; ———, *Sanyo Maru*, Yokohama, 10 cs.; Almo Trading & Importing Co., *Normandie*, Havre, 15 cs.; F. L. Kramer & Co., *Normandie*, Havre, 1 cs.; ———, *Pr. van Buren*, Genoa, 14 cs.; Keller Dorian Paper Co., *Pr. van Buren*, Marseilles, 6 cs.; ———, *New York*, Hamburg, 46 bls., 628 rolls, 13 cs.; Jay Madden Corp., *New York*, Hamburg, 36 bbls, 2 cs.

RAGS, BAGGINGS, ETC.

Chase National Bank, *Sanyo Maru*, Osaka, 40 bls. new cuttings; E. J. Keller Co. Inc., *Berlin*, ———, 149 bls. bagging; Amtorg Trading Corp., *M. Hoelz*, Leningrad, 2,180 bls. rags; Irving Trust Co., *M. Hoelz*, Leningrad, 1,776 bls. flax waste; Irving Trust Co., *Black Tern*, Antwerp, 122 bls. bagging; Royal Manfg. Co., *American Shipper*, Manchester, 33 bls. cotton waste; ———, *American Shipper*, Manchester, 47 bls. old strings; Leigh Textile Co., *American Shipper*, 22 bls. cotton waste; ———, *Pr. van Buren*, Bombay, 257 bls. cotton waste; ———, *American Merchant*, London, 23 bls. rags; J. Cohen & Son Co. Inc., *Scythia*, Liverpool, 24 bls. new cuttings; American Express Co., *Scythia*, Liverpool, 58 bls. rags; Castle & Overton, Inc., *Collamer*, Havre, 148 bls. bagging; J. Eisenberg Co. Inc., *Collamer*, Dunkirk, 9 bls. rags; Royal Manfg. Co., *Collamer*, Dunkirk, 30 bls. cotton waste; E. J. Keller Co. Inc., *Gerolstein*, ———, 224 bls. bagging; ———, *Gerolstein*, ———, 10 bls. cotton waste; Van Oppen &

Co., *Exchange,* Valencia, 143 bls. bagging; W. Garretson, *Skagerak,* Shanghai, 103 bls. bagging; Royal Manfg. Co., *Skagerak,* Shanghai, 100 bls. cotton waste; ———, *Skagerak,* Kobe, 390 bls. cotton waste; E. J. Keller Co. Inc., *Edam,* ———, 33 bls. paper stock; E. J. Keller Co. *Examiner,* ———, 357 bls. paper stock; E. J. Keller Co. *Cypria,* ———, 203 bls. bagging.

OLD ROPE

Chase National Bank, *American Merchant,* London, 101 coils; Chase National Bank, *Sea Glory,* Bristol, 70 coils.

CASEIN

———, *American Merchant,* London, 40 drums.

WOOD PULP BOARDS

Jay Madden Corp., *Sagoporack,,* Kotka, 33 bls., 5 tons; Jay Madden Corp., *Sagoporack,* Wiborg, 115 bls., 17 tons; Griffin Rutgers, Inc., *New York,* Hamburg, 66 cases; Dingelstedt & Co., *New York,* Hamburg, 20 cases.

WOOD PULP SHEETS

———, *Berlin,* Bremen, 90 bls.; ———, *New York,* Bremen, 95 bls.

WOOD PULP

Perkins Goodwin & Co., *Schr. Theoline,* St. George, N. B., 18,374 bdls. wood pulp; Acer McLernon & Co. Ltd., *Borgestad,* Woodfibre, B. C., 760 bls. sulphite, 133 tons; Castle & Overton, Inc., *Sagoporack,* Wiborg, 1,674 bls. wood pulp, 305 tons; Lagerloef Trading Co., *Sagoporack,* Kotka, 435 bls. sulphite, 87 tons; Lagerloef Trading Co., *Sagoporack,* Kotka, 20 bls. sulphate, 4 tons; Perkins Goodwin & Co., *Sagoporack,* Gdynia, 300 bls. wood pulp, 56 tons; J. Andersen & Co., *Idefjord,* Oslo, 2,000 bls. sulphite; Price & Pierce, Ltd., *Idefjord,* Oslo, 300 bls. sulphite; E. M. Sergeant Pulp & Chemical Co., *Idefjord,* Oslo, 240 bls. chemical pulp; Chase National Bank, *Idefjord,* Tofte, 3,600 bls. sulphite; Price & Pierce, Ltd., *Idefjord,* Greaker, 625 bls. sulphite; Castle & Overton, Inc., *New York,* Hamburg, 2,590 bls. wood pulp, 518 tons; Irving Trust Co., *New York,* Bremen, 750 bls. wood pulp, 127 tons.

NEWARK IMPORTS

WEEK ENDING JULY 18, 1936

H. G. Craig Co., *Donpaco,* Donnacona, 314 rolls newsprint.

PORTLAND IMPORTS

WEEK ENDING JULY 18, 1936

Gottesman & Co. Inc., *Fechenheim,* Sweden, 1,625 bls. wood pulp; Pagel Horton & Co. Inc., *Fechenheim,* Sweden, 7,200 bls. sulphite; Pagel Horton & Co. Inc., *Fechenheim,* Sweden, 306 bls. sulphate.

BOSTON IMPORTS

WEEK ENDING JULY 18, 1936

Leigh Textile Co., *American Shipper,* Manchester, 13 bls. cotton waste; W. C. Jones, *American Shipper,* Manchester, 93 bls. cotton waste; ———, *American Shipper,* Manchester, 116 bls. cotton waste; Atkinson Haserick & Co., *Pr. van Buren,* Genoa, 5 cs. paper; Acer McLernon & Co. Ltd., *Borgestad,* Woodfibre, B. C., 950 bls. sulphite, 166 tons; Acer McLernon & Co. Ltd., *Borgestad,* Port Alice, B. C., 2,660 bls. sulphite, 462 tons; Andrews Paper Co., *Scythia,* Liverpool, 1 cs. parchment paper; G. F. Malcolm, Inc., *Scythia,* Liverpool, 39 cs. tissue paper; ———, *Scythia,* Liverpool, 24 bls. rags; ———, *Collamer,* Havre, 100 bls. bagging; Irving Trust Co., *Collamer,* Havre, 15 bls. glue stock; Irving Trust Co., *Collamer,* Dunkirk, 82 bls. bagging; ———, *Collamer,* Dunkirk, 103 bls. rags; ———, *Black Osprey,* Antwerp, 36 bls. rags; ———, *Black Osprey,* Antwerp, 113 rolls wrapping paper; American Express Co., *Black Osprey,* Antwerp, 118 rolls wrapping paper; Royal Manfg. Co., *Black Osprey,* Antwerp, 55 bls. cotton waste; Irving Trust Co., *Black Osprey,* Antwerp, 43 bls. bagging; Irving Trust Co., *Black Osprey,* Rotterdam, 81 coils old rope; D. C. Andrews & Co., *Edam,* Rotterdam, 134 bls. old strings; Stone & Forsyth Co., *Edam,* Rotterdam, 111 bls. old strings; ———, *Edam* Rotterdam, 60 rolls straw board; ———, *Edam,* Rotterdam, 23 bls. rags; Pagel Horton & Co. Inc., *Fechenheim,* Sweden, 1,680 bls. sulphite; Pagel Horton & Co. Inc., *Fechenheim,* Sweden, 2,035 bls. sulphate; Price & Pierce, Ltd., *Fechenheim,* ———, 550 tons unbleached sulphite; Price & Pierce, Ltd., *Siljesetad,* ———, 25 tons unbleached sulphite.

PHILADELPHIA IMPORTS

WEEK ENDING JULY 18, 1936

———, *Black Osprey,* Antwerp, 19 bls. cotton waste; 49 bls. rags; ———, *Black Osprey,* Rotterdam, 416 bls. rags; Lagerloef Trading Co., *Sagoporack,* Helsingfors, 1,100 bls. sulphite, 181 tons; Lagerloef Trading Co., *Sagoporack,* Wiborg, 504 bls. sulphite, 98 tons; Castle & Overton, Inc., *Sagoporack,* Wiborg, 130 bls. wood pulp, 26 tons; J. W. Hampton Jr. & Co., *Sagoporack,* Kotka, 532 rolls newsprint; Johaneson Wales & Sparre, Inc., *Sagoporack,* Gdynia, 1,650 bls. wood pulp, 165 tons; Mente & Co. Inc., *Sagoporack,* Gdynia, 36 bls. bagging; ———, *Artigas,* Hamburg, 316 bls. wood pulp, 47 tons; ———, *Artigas,* Hamburg, 178 rolls newsprint; ———, *Artigas,* Hamburg, 242 rolls wrapping paper; E. Weber, *Artigas,* London, 4 cs. drawing paper.

WILMINGTON IMPORTS

WEEK ENDING JULY 18, 1936

Lagerloef Trading Co., *Sagoporack,* Helsingfors, 1,825 bls. sulphite, 310 tons; Lagerloef Trading Co., *Sagoporack,* Wiborg, 3,081 bls. sulphite, 610 tons; Castle & Overton, *Sagoporack,* Wiborg, 5,390 bls. wood pulp, 1,078 tons; Jay Madden Corp., *Sagoporack,* Kotka, 132 rolls newsprint; ———, *Sagoporack,* Gdynia, 943 bls. wood pulp, 143 tons; Perkins Goodwin & Co., *Sagoporack,* Gdynia, 485 bls. wood pulp, 75 tons.

BALTIMORE IMPORTS

WEEK ENDING JULY 18, 1936

Congoleum Nairn Co., *Exchange,* Valencia, 564 bls. rags; Pagel Horton & Co. Inc., *Tampa,* Sweden, 2,500 bls. sulphite; Pagel Horton & Co. Inc., *Tampa,* Sweden, 2,750 bls. sulphate; Gottesman & Co. Inc., *Toledo,* Norway, 2,400 bls. wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING JULY 18, 1936

E. J. Keller Co. Inc., *Recca,* ———, 551 bls. paper stock.

SOUTH HAVEN IMPORTS

WEEK ENDING JULY 18, 1936

Price & Pierce, Ltd., *Vigor,* ———, 290 tons bleached sulphite.

MONTREAL IMPORTS

WEEK ENDING JULY 18, 1936

Gottesman & Co. Inc., *Drammensfjord,* Sweden, 11,650 bls. wood pulp; Price & Pierce, Ltd., *Drammensfjord,* ———, 1,000 rolls unbleached kraft pulp; Price & Pierce, Ltd., *Drammensfjord,* ———, 900 tons unbleached sulphite.

New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, July 22, 1936.

Conditions in the local paper market are satisfactory for the time of year. Demand for the various grades of paper is fairly persistent. Sales forces of the leading paper organizations are looking forward to a busy Autumn. Prices are generally well sustained and reports of concessions are infrequent.

The outlook for the newsprint paper market is promising. Demand from the publishers of newspapers in the largest cities continues brisk. Manufacturing operations in the United States, Canada and Newfoundland are being maintained in sufficient volume to take care of current requirements. The price situation is improving.

Business in the fine paper market is holding up well. Orders for book, bond, cover and ledger papers are still running ahead of a year ago. Tissues are moving in good volume, although prices are irregular. The coarse paper market is firm and summer specialties are in excellent request.

Mechanical Pulp

The ground wood paper market is fairly steady. Production of domestic and imported mechanical pulp is proceeding regularly and the statistical position of the industry is considered sound. Supplies are moving into consumption at a normal pace for the season. Prices are generally holding to schedule.

Chemical Pulp

Sentiment in the chemical pulp market is optimistic. Demand for the various domestic and imported grades is well sustained. Prices are higher, in some instances. No. 1 bleached sulphite is now quoted at $2.70 to $3.30; No. 1 kraft pulp is offered at $1.85 to $2.10; and No. 2 at $1.70 to $1.85, all on dock, Atlantic ports.

Old Rope and Bagging

The old rope market continues listless. Demand for both domestic and foreign old manila rope is restricted. Mixed strings are only moderately active. Old rope quotations, however, are fairly steady. Some improvement is noticed in the bagging market. Scrap and gunny bagging are more active, while prices are slightly firmer.

Rags

No radical changes transpired in the domestic rag market. Due to the increased price of the raw material old and new cotton cuttings are in a stronger position. Demand for roofing rags is rather light at present and quotations are easier. The imported rag market is quiet, with prices nominal.

Waste Paper

The bright particular feature of the paper stock market is the improvement in the lower grades, for which the board mills are showing more interest. Prices are stronger than of late. No. 1 mixed paper is now offered at 30 to 35 cents, a substantial advance. The higher grades of waste paper continue steady to firm.

Twine

While most of the business transacted in the local twine market continues on routine lines the outlook for the future is considered promising, in most quarters. One good sign is the increased volume of inquiries around, some of which should materialize into good orders. The price situation is unchanged.

Goodrich Water Hose for Paper Mill Service

A water hose designed especially for paper mill service has been introduced by the B. F. Goodrich Company, Akron, Ohio. The hose, known as Type 1788, has a quality tube compounded to withstand the action of hot water without swelling. Cover is a tough, floating stock of triple thickness, thoroughly bonded to the carcass, and has maximum resistance to abrasion.

Type 1788 Water Hose is particularly adapted for wash-up and blow pit service. High quality of materials used produces a hose that is exceedingly flexible and very light in weight. Not only is the tube unaffected by hot water but the cover will not blister or peel, even though constantly wet. Neither tube or cover will ever shred or disintegrate, allowing particles and pieces to get into paper stock, causing damage or loss. The thickness of the hose wall makes it difficult to injure this hose, even under abusive treatment.

C. F. Werner Joins Hurlbut Paper Company

Carl F. Werner has joined the sales organization of the Hurlbut Paper Company in South Lee, Mass., and will act as the company's New England representative for fine papers.

Mr. Werner has been associated for the past eighteen years with the Brown Company of Portland, Maine, and during the past five years, he was that company's representative for its New York territory.

Mr. Werner has had long experience in sales promotional work and has a host of friends in the fine paper field.

St. Regis Steps Up Car Service

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, MASS., July 13, 1936—Through the cooperation of the New England merchants, the Boston office of the St. Regis Paper Company, 80 Federal street, is pleased to announce that they have stepped up their club car service from two to three cars a month. Springfield and Worcester, as well as Boston buyers, take advantage of this improved delivery service from the St. Regis mills.

Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, July 22, 1936.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are generally holding to schedule. The pulp is quoted at $42.50 to $45 per ton, in bulk; while the powder is selling at 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Steadiness prevails in the bleaching powder market. Contract shipments are moving in moderate volume, due to the season. Prices remain unchanged. Bleaching powder is quoted at $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firmer. Domestic standard ground is quoted at 15¾ and finely ground at 16¼ cents; while French and Argentine standard ground are selling at 15¾ and finely ground at 16 cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Conditions in the caustic soda market are satisfactory. The contract movement is well up to average. Solid caustic soda is quoted at $2.55 to $2.60; while the flake and ground are selling at $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is fairly active. Shipments against contract are normal for the season. Prices are steady. Imported china clay is quoted at $12.50 to $21 per ton, ship side; while domestic paper making clay is quoted at $6.50 to $12 per ton, at mine.

CHLORINE.—Paper mill demand for chlorine is well sustained. The contract movement is fairly heavy. Prices are holding to previously quoted levels, without difficulty. Chlorine is quoted at $2.15 to $2.55 per 100 pounds, in tank cars, at works.

ROSIN.—The rosin market is stronger. Paper making gum rosin is now quoted at $5.15 and wood rosin at $5.10 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $2.79½ per 100 pounds, in tank cars, at works.

SALT CAKE.—Inquiries for salt cake are fairly numerous. Prices are holding to schedule, in most instances. Salt cake is quoted at $12 to $13; chrome salt cake at $11 to $12 per ton, at works. Imported salt cake is selling at $12 to $13 per ton, ship side.

SODA ASH.—The soda ash market is slightly more active. Shipments against contract are going forward freely. Prices remain unchanged. Quotations on soda ash, in car lots, at works, per 100 pounds, are as follows: in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Some improvement is noticed in the starch market. The contract movement is fairly regular. Prices are stronger. Special paper making starch is quoted at $3.35 per 100 pounds, in bags; and at $3.62 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—The sulphate of alumina market is exhibiting a strong undertone. Contract shipments are moving freely. Prices remain unchanged. Commercial grades are quoted at $1.35 to $1.60; and iron free at $2 to $2.25 per 100 pounds, in bags, at works.

SULPHUR.—The sulphur market continues steady. Yearly contracts are quoted at $18 per ton, in bulk, on orders of 1,000 tons, or over and $20 on smaller quantities. On spot and nearby carloads the quotation is $21 per ton. All quotations are in car lots, at works.

TALC.—Trading in the talc market is moderately active. Supplies are moving into consumption in fairly good volume for the time of year. Domestic talc is quoted at $16 to $18 per ton, at eastern mines; while imported talc is selling at $23 to $30 per ton, on dock.

Market Quotations

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.50 @ 8.50	
No. 2 Sulphite	6.50 @ 7.50	
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50
Book, B Grade, Cased		
S. & S. C.	5.85 @ 6.60	
S. & S. C. Litho.	6.10 @ 6.85	
M. F.	5.60 @ 6.35	
No. 4 Grade		
Coated and Enamel	6.80 @ 7.65	
Coated Litho	6.80 @ 7.65	

Tissues—Per Ream—	
White No. 1	.82½ @ —
White No. 1 M. G.	.77½ @ —
White No. 1½	.62½ @ —
White No. 2	.60 @ —
Anti-Tarnish M. G.	.67½ @ —
Colored	.80 @ —
Kraft	.67½ @ —
Manila	.60 @ —
Unbleached Toilet	2.60 @ 3.30
Bleached Toilet	3.94 @ 5.26
Paper Towels—	
Unbleached	2.10 @ 3.35
Bleached	3.30 @ 3.70
Manila—	
No. 1 Jute	9.00 @ 9.25
No. 2 Jute	7.75 @ 8.50
No. 1 Wood	4.00 @ 5.25
No. 2 Wood	3.50 @ 4.00
Fibre Papers—	
No. 1 Fibre	4.25 @ 5.50
No. 2 Fibre	4.00 @ 4.75

(Delivered New York)

News, per ton—	
Roll, contract	41.00 @ —
Sheets	46.00 @ —
Kraft—	
No. 1 Northern	4.25 @ 4.75
Standard	4.12½ @ —
Southern	4.00 @ —
Boards—per ton—	
News	32.50 @35.00
Chip	32.50 @35.00
Sgl. Mla. Ll. Chip	45.00 @47.50
Jute Lined Chip	42.50 @45.00
Kraft Liners	60.00 @62.50
White Pat. Coated	57.50 @60.00
Binders Boards	67.00 @75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—	
Moist	24.00 @25.00
Dry	24.00 @25.00

(Delivered)

No. 1 Domestic and Canadian	27.00 @28.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—	
Division 1	2.70 @ 3.30
Division 2	2.65 @ 2.75
Division 3	2.60 @ 2.70
Prime Qualities—	
Class 1. All Prime Easy Bleaching	2.05 @ 2.10
Other Than Easy Bleaching—	
Class 2. Higher than Standard	2.00 @ 2.05
Class 3, Standard	1.95 @ 2.00
Class 4. Lower than Standard	1.90 @ 1.95

(On Dock, Atlantic Ports)

Kraft Bleached	3.00 @ 3.25
Kraft No. 1	1.85 @ 2.10
Kraft No. 2	1.70 @ 1.85

(F. o. b. Pulp Mill)

Kraft Domestic	1.80 @ 2.00

(Delivered)

Soda Bleached	2.60 @ —

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—	
New White, No. 1	7.50 @ 7.75
Silesias No. 1	5.50 @ 5.75
New Unbleached	8.25 @ 8.50
New Soft Blacks	3.75 @ 4.00
Blue Overall	6.50 @ 6.75
Fancy	3.00 @ 3.25
Washables	2.25 @ 2.50
Mixed Khaki Cuttings	3.50 @ 3.75
O. D. Khaki Cuttings	4.25 @ 4.50
Men's Corduroy	2.00 @ 2.25
New Mixed Blacks	2.75 @ 3.00

Old Rags

White, No. 1—	
Repacked	3.25 @ 3.50
Miscellaneous	2.75 @ 3.00
White, No. 2—	
Repacked	2.25 @ 2.50
Miscellaneous	1.75 @ 2.00
Thirds and Blues—	
Repacked	2.00 @ 2.25
Miscellaneous	1.90 @ 2.00
Roofing Rags—	
No. 1	1.75 @ 1.80
No. 2	1.15 @ 1.25
No. 3 (bagging)	1.10 @ 1.15
No. 4	1.10 @ 1.15
No. 5A	.80 @ .90

Foreign Rags

New Rags

New Dark Cuttings	2.25 @ 2.50
New Mixed Cuttings	2.00 @ 2.25
New Light Silesias	4.50 @ 5.00
Light Flannelettes	4.50 @ 5.00
New White Cuttings	7.00 @ 7.50
New Light Oxfords	4.00 @ 4.50
New Light Prints	3.00 @ 3.25

Old Rags

No. 1 White Linens	7.50 @ 8.00
No. 2 White Linens	6.50 @ 7.00
No. 3 White Linens	4.50 @ 5.00
No. 4 White Linens	2.25 @ 2.50
No. 1 White Cotton	4.25 @ 4.75
No. 2 White Cotton	3.25 @ 3.75
No. 3 White Cotton	2.50 @ 2.75
No. 4 White Cotton	1.90 @ 2.15
Extra Light Prints	2.00 @ 2.25
Ord. Light Prints	1.75 @ 1.85
Med. Light Prints	1.55 @ 1.65
Dutch Blue Cottons	2.25 @ 2.50
French Blue Linens	3.50 @ 4.00
German Blue Linens	2.50 @ 2.75
German Blue Cottons	2.00 @ 2.25
Checks and Blues	2.00 @ 2.25
Linsey Garments	2.15 @ 2.25
Dark Cottons	1.90 @ 2.10
Old Shopperies	1.75 @ 2.00
New Shopperies	1.75 @ 2.00
French Blues	2.25 @ 2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—	
Foreign	2.10 @ 2.15
Domestic	1.75 @ 1.85
Wool Tares, light	1.50 @ 1.75
Wool Tares, heavy	1.85 @ 2.05
Bright Bagging	1.70 @ 1.75
Manila Rope—	
Foreign	2.40 @ 2.60
Domestic	2.25 @ 2.50
Mixed Strings	1.10 @ 1.15
New Burlap Cut	2.75 @ 3.00
Hessian Jute Threads—	
Foreign	3.00 @ 3.25
Domestic	2.80 @ 3.00

Old Waste Papers

(F. o. b. New York)

Shavings—	
White Envelope Cuttings	2.55 @ 2.65
Ordinary Hard White No. 1	2.25 @ 2.35
Hard White No. 2	2.10 @ 2.20
Soft White No. 1	1.95 @ 2.05
Flat Stock—	
Stitchless	.65 @ .75
Over issue Mag	.65 @ .75
Solid Flat Book	.55 @ .60
Crumpled No. 1	.35 @ .40
Solid Book Ledger	1.50 @ 1.65
Ledger Stock	.85 @ .90
New B. B. Chips	.30 @ .35
Manilas—	
New Env. Cut	1.75 @ 1.85
New Cuttings	1.35 @ 1.45
Bogus Wrapper	.40 @ .50
Old Kraft Machine—	
Compressed bales	1.05 @ 1.30
News—	
No. 1 White News	1.15 @ 1.25
Strictly Overissue	.50 @ .60
Strictly Folded	.30 @ .35
No. 1 Mixed Paper	.30 @ .35

J. Andersen & Co.

Selling Agents

21 East 40th Street

New York

CHEMICAL & MECHANICAL PULP

Kraft Pulp

BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
KALIX TRÄINDUSTRI AKTIEBOLAG
Vanaftjärden, Sweden
MUNKSUNDS AKTIEBOLAG
Munksund, Sweden
NENSJÖ CELLULOSA A.-B.
Sprängsvikén, Sweden

Unbleached Sulphite

AKTIESELSKABET GREAKER CELLULOSEFABRIK
Greaker, Norway
BERGVIK OCH ALA NYA AKTIEBOLAG
Söderhamn, Sweden
CELLULOSEFABRIKS A.-G.
Bratislava, Czecho-Slovakei
SVANÖ AKTIEBOLAG
Svanö, Sweden

Bleached Sulphite

KELLNER-PARTINGTON PAPER PULP CO., LTD.
Sarpsborg, Norway
Edsvalla, Sweden
Hallein & Villach, Austria

West Virginia Pulp and Paper Company

230 Park Ave.
New York

35 East Wacker Drive
Chicago

503 Market St., San Francisco, Cal.
Public Ledger Building, Philadelphia, Pa.

Manufacturers of

ENGLISH FINISH SUPERCALENDERED MACHINE FINISHED BOOK and LITHOGRAPHIC PAPERS

Offset, Envelope, Bond, Writing, Mimeograph, Ledger, Cover and Music Papers, Index Bristol, Post Card and Label Papers

HIGH GRADE COATED BOOK

. . . .

KRAFT WRAPPING AND KRAFT ENVELOPE.
KRAFT CYLINDER BOARD.
BLEACHED SULPHITE AND SODA PULP.
BLEACHED AND UNBLEACHED KRAFT PULP.

MILLS:

Mechanicsville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Cass, West Virginia

THE DRAPER FELTS

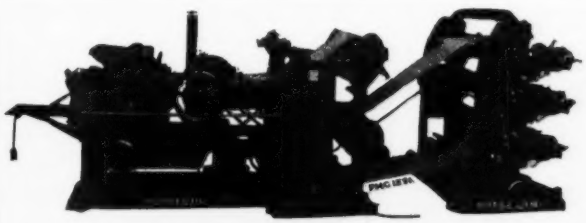
All kinds and styles of Felts for all kinds and styles of Papers.

Write us about your Felt problems and let us help you reduce your Felt Costs—we will call anywhere at any time.

DRAPER BROS. COMPANY

CANTON, MASS.

Woolen manufacturers since 1856



POTDEVIN NOTION BAG MACHINE

MOST EFFICIENT

OVER 850 BAGS PER MINUTE
PRODUCES BOTH FLAT & SQUARE BAGS
FULL RANGE OF 6 STANDARD NOTION BAGS
HANDLES KRAFT, GLASSINE, BOND & SULPHITE

ALSO MAKERS OF WAXERS & PRESSES

POTDEVIN MACHINE CO.

1223 38TH ST.
Est. 1893

BROOKLYN, N. Y.
Tel. Windsor 6-1700

Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.13¼	@	.15¼
Belg. White Hemp	.14¼	@	.17¼
India Compress	.13¾	@	.14½
Fine Polished—			
Fine India	.21½	@	.23½
Special	.19½	@	.21½
Unpolished—			
Box	.12	@	.12½
Paper Makers	.09	@	.13½
Tube Rope	.10	@	.15½
Wall Paper	.11	@	.14½
Wrapping	.15½	@	.21
Special	.15	@	.15½
Soft Fiber Rope	.12½	@	.12¾

(Hard Fibre)

Bond	.09½	@	.18
Anchor	.09	@	.10½
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¾
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¼	@	.06¼
Sulphite Screenings	.03	@	.03¼
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds		Ledgers
100% Rag Ext. No. 1	.36		.37
100% Rag	.28		.29
75% Rag	.21		.22
65% Rag	.18		.19
50% Rag	.15		.16
25% Rag	.12½		.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	52.25	@	54.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1.	.08	@	.08½
New White, No. 2.	.04½	@	.05
Light Silesias	.05½		—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft.	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.06	@	.06½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.01¾	@	.02¾
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	1.75	@	2.00
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02¼
New Canvas	.04	@	.04½
New Black Mixed.	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	—
Repacked	2.25	@	2.50
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	—
Domestic No. 2	1.40	@	—
Roofing bagging	1.10	@	—

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.25	@	2.50
Sisal Rope	2.00	@	2.25
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.00	@	2.50
No. 2	.90	@	1.00
Wool Tares, heavy	3.00	@	3.25
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.80	@	1.85
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.65	@	.70
Manila Cuttings	1.50	@	1.60
Print Manila	.50	@	.60
Container Manila	.50	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.35	@	.40
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.60	@	—
Old Newspapers	.40	@	—

BOSTON

Paper

Rag Content Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers— Delivered Zone 1	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08½	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06½
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04½	@	—
No. 2 Kraft	.04½	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls.009	—	@	35.00
Filled News Board	40.00	@	45.00
Chip Board	37.50	@	40.00
Single Manila Lined Chip	47.50	@	52.50
Single White, Patent Coated News Board (Bender)	55.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.00	@	2.10
No. 1 Soft White	1.75	@	1.85
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.60	@	.70
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.05	@	1.12½
Mixed Papers	.30	@	—
Print Manila	.47½	@	.50
Container Manilas	.27½	@	—
Old Newspapers	.30	@	—
Overissue News	—	@	.40
Box Board Chips	—	@	.25
Corrugated Boxes	.35	@	.37½
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	.40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.35	@	2.45
Domestic	2.25	@	—
Transmission Rope	1.20	@	1.30
Jute Rope	1.90	@	2.10
Jute Carpet Threads	1.00	@	1.10
Gunny No. 1—			
Foreign	1.90	@	2.00
Domestic	1.80	@	1.90
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	1.90	@	2.00
Domestic	1.60	@	1.75
Scrap Sisal	1.90	@	2.00
Scrap Sisal for Shredding	2.10	@	2.25
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.00	@	2.25
Australian Wool Pouches	2.25	@	2.35
Heavy Baling Bagging	1.75	@	2.10
Paper Mill Bagging	1.65	@	1.70
Bagging No. 2	1.10	@	1.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.01¾	@	.02
New White No. 1.	.07	@	.07½
New White No. 2.	.04	@	.04¼
Silesias No. 1	.05	@	.05½
New Black Silesias	.03½	@	.04¼
Soft Unbleached	.07¼	@	.07¾
Blue Cheviot	5.50	@	6.00
Fancy	.02½	@	.02¾
Washable	.0165	@	.0170
Cottons—According to grades—			
Blue Overalls	5.00	@	5.50
New Black, soft	.04	@	.04¼
Khaki Cuttings	.04	@	.04¼
O. D. Khaki	.03¾	@	.04¼
Corduroy	.01¾	@	.02
New Canvas	—	@	.05
B.V.D. Cuttings	—	@	.06¼

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.30	@	1.40
No. 2	1.20	@	1.25
No. 3	—	@	1.15

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.50	@	1.70
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	1.75	@	1.90
Old Linsey Garments	1.75	@	2.00
New Silesias	5.00	@	5.75

TORONTO

Paper

(F. o. b. Mill)

Bond—			
No. 1 Sulphite	.11	@	—
No. 2 Sulphite	.08½	@	—
No. 1 Colored	.12	@	—
No. 2 Colored	.09	@	—
Ledgers			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F. (Carloads)	6.50	@	—
No. 2 M. F. (Carloads)	6.00	@	—
No. 3 M. F. (Carloads)	6.00	@	—
No. 1 S. C. (Carloads)	7.00	@	—
No. 2 S. C. (Carloads)	6.50	@	—
No. 3 S. C. (Carloads)	6.50	@	—
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft, M. F.	5.90	@	—
Kraft, No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	40.50	@	—
Sheets	45.00	@	—

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.90	@	1.00
Light and Crumpled Book Stock	.80	@	.90
Ledgers and Writings	1.00	@	1.05
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07½	@	.07¾
Fancy Shirt Cuttings	.02¾	@	.03